SERVICE MANUAL

Color Inkjet Printer

SC-P600

EPSON
EXCEED YOUR VISION

SE GROUP CONFIDENTIAL (RELATED STAFF ONLY)

SEIJ 14-005

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Safety Precautions

All safety procedures described here shall be strictly adhered to by all parties servicing and maintaining this product.

DANGER

Strictly observe the following cautions. Failure to comply could result in serious bodily injury or loss of life.

1. Always disconnect the product from the power source and peripheral devices when servicing the product or performing maintenance.
2. When performing works described in this manual, do not connect to a power source until instructed to do so. Connecting to a power source causes high voltage in the power supply unit and some electronic components even if the product power switch is off. If you need to perform the work with the power cable connected to a power source, use extreme caution to avoid electrical shock.

WARNING

Strictly observe the following cautions. Failure to comply may lead to personal injury or loss of life.

1. Always wear protective goggles for disassembly and reassembly to protect your eyes from ink in working. If any ink gets in your eyes, wash your eyes with clean water and consult a doctor immediately.
2. When using compressed air products; such as air duster, for cleaning during repair and maintenance, the use of such products containing flammable gas is prohibited.

PRECAUTIONS

Strictly observe the following cautions. Failure to comply may lead to personal injury or damage of the product.

1. Repairs on Epson product should be performed only by an Epson certified repair technician.
2. No work should be performed on this product by persons unfamiliar with basic safety knowledge required for electrician.
3. The power rating of this product is indicated on the serial number/rating plate. Never connect this product to the power source whose voltages is different from the rated voltage.
4. Replace malfunctioning components only with those components provided or approved by Epson; introduction of second-source ICs or other non-approved components may damage the product and void any applicable Epson warranty.
5. In order to protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.
6. Do not tilt this product immediately after initial ink charge, especially after performing the ink charge several times. Doing so may cause ink to leak from the product because it may take some time for the waste ink pads to completely absorb ink wasted due to the ink charge.
7. Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If you have a skin irritation, consult a doctor immediately.

8. When disassembling or assembling this product, make sure to wear gloves to avoid injuries from metal parts with sharp edges.
9. Use only recommended tools for disassembling, assembling or adjusting the printer.
10. Observe the specified torque when tightening screws.
11. Be extremely careful not to scratch or contaminate the following parts.
    - Nozzle plate of the printhead
    - Ink Supply Unit
    - CR Scale
    - PF Scale
    - Coated surface of the PF Roller
    - Gears
    - Rollers
    - LCD
    - Exterior parts
12. Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.
13. Apply the specified amount of grease described in this manual.
14. Make the specified adjustments when you disassemble the printer.
15. When cleaning this product, follow the procedure described in this manual.
16. When transporting this product after filling the ink in the printhead, pack the printer without removing the ink cartridges in order to prevent the printhead from drying out.
17. Make sure to install antivirus software in the computers used for the service support activities.
18. Keep the virus pattern file of antivirus software up-to-date.

About This Manual

About This Manual: This manual is made for the sole purpose of providing necessary information in order that a serviceperson qualified by Epson performs his / her appropriate repair / maintenance for the applicable Epson's products. You shall not use this manual out of this purpose.
This manual is Epson's confidential information. When you use this manual, you shall hold it in strict confidence and shall not disclose to any third party without prior consent of Epson.
This manual, consists of the following chapters, is intended for repair service personnel and includes information necessary for properly performing maintenance and servicing the product.

CHAPTER 1. DISASSEMBLY / REASSEMBLY

Describes the disassembly/reassembly procedures for main parts/units of the product, and provides the standard operation time for servicing the product.

CHAPTER 2. ADJUSTMENT

Describes the required adjustments for servicing the product.

CHAPTER 3. MAINTENANCE

Describes maintenance items and procedures for servicing the product.

CHAPTER 4. APPENDIX

Provides the following additional information for reference:

- Power-On Sequence
- Connector Diagram

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Pay attention to all symbols when they are used, and always read explanation thoroughly and follow the instructions.

Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in serious injury or loss of life.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in bodily injury, damage or malfunction of equipment.

May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

For Chapter 1 "Disassembly/Reassembly", symbols other than indicated above are used to show additional information for disassembly/reassembly. For the details on those symbols, see "1.2 Disassembly/Reassembly Procedures (p14)".

Revision Status

Revision	Date of Issue	Description
A	September 30, 2014	First Release
B	February 12, 2015	Chapter 1 - "1.1.2 Jigs (p10)": calibrator names were revised. Chapter 2 - "2.1 Adjustment Items and the Order by Repaired Part (p32)": adjustment items when Print Head was removed were revised. - "2.2 Adjustment Items (p36)": description about Colorimetric calibration was revised. - "2.3.7 Head Angular Adjustment CR/PF (p55)": partially revised. - "2.3.8 Colorimetric Calibration (p57)": contents were added newly.
C	March 31, 2015	Chapter 1 - "1.1 Overview (p9)": “WARNING” was added - "1.1.1 Tools (p9)": “CAUTION” was added
D	November 24, 2015	Chapter 2 - "2.2 Adjustment Items (p36)": Note was added outside of Table2-3. - "2.3.6 Initial setting (p54)": partially revised. - "2.3.7 Head Angular Adjustment CR/PF (p55)": procedure was revised. - "2.3.10 Touch screen adjustment (p70)": contents were added newly.

Contents

CHAPTER **1**

DISASSEMBLY/REASSEMBLY

1.1 Overview

This chapter describes procedures for disassembling the main parts/units of Stylus Photo R3000. Unless otherwise specified, disassembled parts/units can be reassembled by reversing the disassembly procedure. See the cautions or tips for disassembly/reassembly described in "1.3 Detailed Disassembly/Reassembly Procedure for each Part/Unit (p19)".

Read the "Safety Precautions (p3)" before disassembling and reassembling.

When you have to remove units or parts that are not described in this chapter, see the exploded diagrams of SPI (Service Parts Information).

This warning is for Taiwan.

警告

如果更換不正確之電池型式會有爆炸的風險

請依製造商說明書處理用過之電池

1.1.1 Tools

Use only specified tools to avoid damaging the printer.

Name	Availability*1	EPSON Part Code*2
(+) Phillips screwdriver #1	O	1080530
(+) Phillips screwdriver #2	O	---
Flathead screwdriver	O	---
Flathead Precision screwdriver #1	O	---
Tweezers	O	---
Longnose pliers	O	---
Acetate tape	---	1003963
Nippers	O	---

Note *1: Some of the tools listed above are commercially available.
*2: EPSON provides the tools listed with EPSON part code.

Bring back the following brought and used items, then dispose of them based on the local regulations in your country, please.

- **Ink cartridges**
- **Cleaning cartridges**
- **Draining cartridges**

Especially in case of ink cartridges in Europe, please refer to the following web site to confirm the regulation in detail.

ECO Info: http://www.epson.eu/weee (available from July 2015)

1.1.2 Jigs

Name*1	Q'ty	Availability*2	EPSON Part Code
Sonic tension gauge U-508	1	---	1640645
PF Roller Adjustment Jig	1	---	1553098
PF Roller Adjustment Jig Stand	1	---	1553099
Level block	1	---	1304994
Adjustment gauge for PG adjustment	1	---	1276333
Oscilloscope or Tester + High-voltage probe	1	O*3	---
Calibrator (i1 Pro UV-Cut or i1Pro2)	1	O	---

Note *1: The jigs above are used for adjustment (See Chapter 2 " Adjustment (p31)".) No jigs are required for disassembling/ reassembling this printer.

*2: Some of the tools listed above are commercially available.

*3: Recommended maker and model number: (If the device which can measure resistance value of 100MΩ is not used, you may not measure a value definitely. As a result, there is the case that a parameter is not set within a standard, the Mist Recovery Function does not act, and dirt in the printer or printing back side dirt of the paper occur.)

- Oscilloscope + High-voltage probe (A high voltage probe around 100MΩ made by Tektronix: P-5210A or THDP0100)
- Tester (Ex. FLUKE True-rms Multimeter 110 Series, 3+1/2 columns of DMM: More than input 10MΩ) + High voltage probe (around 75MΩ: FLUKE 80K-6 or 80K-40)

1.1.3 Precautions before Disassembling

☐ Unlocking the carriage

Unlock the carriage by following the procedure below.

1. Remove the Rear Housing, Right Cover, and Right Decoration Plate.
2. Insert a phillips screwdriver into the hole of the frame on the right side of the printer, and rotate the white shaft of the Ink System.

Table 1-1. Carriage Lock/Unlock

Direction of Rotation	Carriage
Clockwise (CW)	Locked
Counterclockwise (CCW)	Unlocked

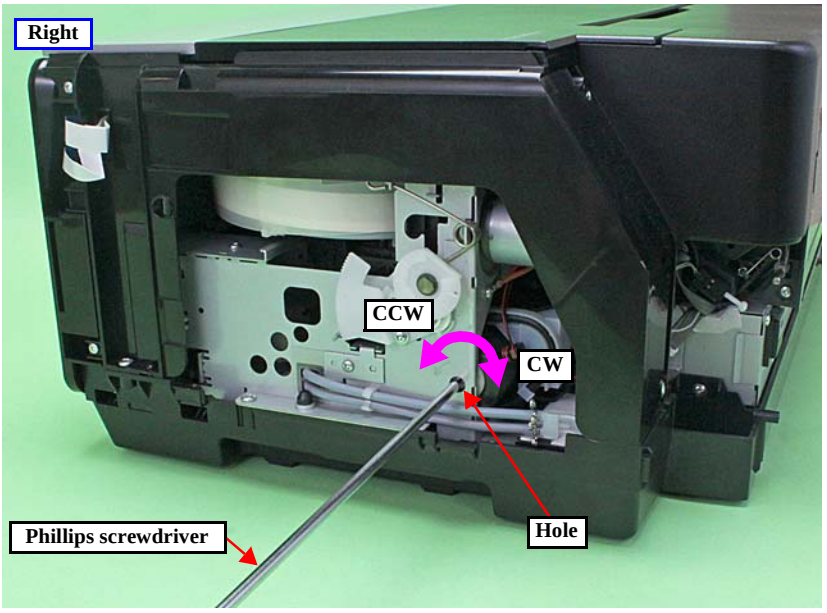


Figure 1-1. Unlock the Carriage

☐ Handling the Ink Supply Unit

In order to prevent ink leakage, be careful of the following when handling the Ink Supply Unit.
(See "Ink Supply Unit (p22)" and "CR Contact Module (p22)" for details.)

- Unless otherwise specified in this manual, do not disassemble the Ink Supply Unit any further than specified as an ASP. Otherwise, replace the Ink Supply Unit with a new one.
- Be careful not to damage the film of the ink path.
- When disassembling/reassembling the printer, be careful not to apply extra force on the joint part of the ink tube and I/C Holder Unit, and on that of the ink tube and Ink Selector.

1.1.4 Preparation before Returning the Unit to the User

When returning the printer to the user, make sure to secure the specified points with tapes to avoid damaging the printer during transport.

☐ Attaching the front tray lock (tape length: 90 ± 2 mm, tape width: 18 mm, fold one end by 5 mm)

Attach the front tray lock (1535369) and secure it with strong tape as follows.

1. Attach the front tray lock on the position shown in Figure 1-2.
2. Attach the unfolded end of strong tape on the front tray lock as shown in Figure 1-2, and pull the tape and apply it along the shapes of the Upper Housing Support Assy to secure the front tray lock.

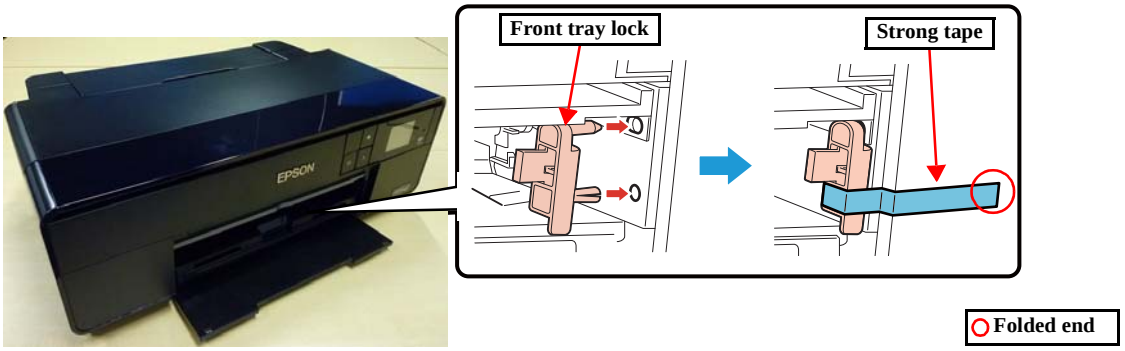


Figure 1-2. Attaching and Securing the Front Tray Lock

☐ Attaching the front tray support pad (tape length: 190mm, tape width: 18 mm, fold one end by 5 mm)

Attach the front tray support pad (5125513) and secure it with strong tape as follows.

1. Attach the strong tape to the front tray support pad shown in Figure 1-3.

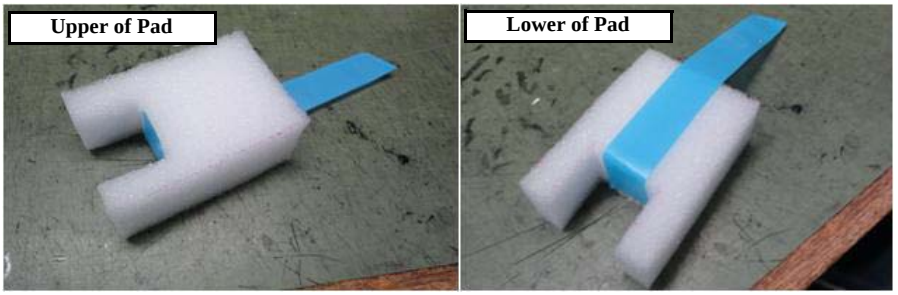


Figure 1-3. Attaching the strong tape to the front tray

2. Attach the front tray support pad to the front of the printer shown in Figure 1-4.

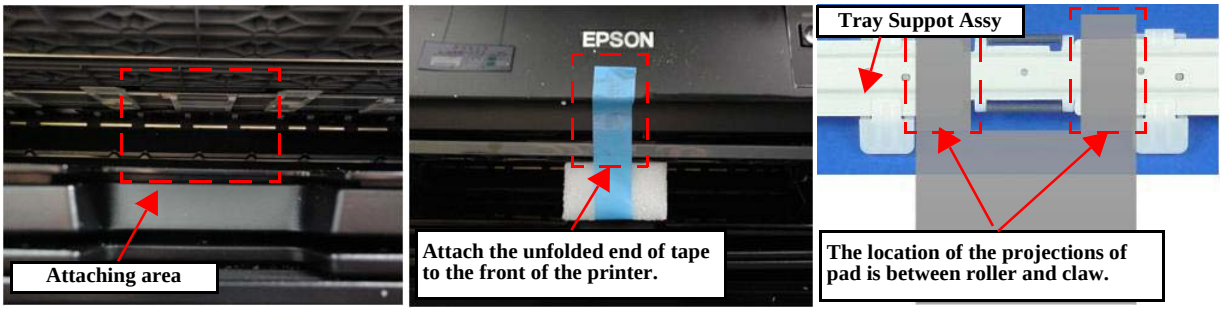


Figure 1-4. Attaching the front tray support pad

☐ Securing the CR Unit (tape length: 220 ± 2 mm, tape width: 18 mm, fold one end by 5 mm)

Secure the CR Unit with strong tape as follows.

1. Open the printer cover and move the CR Unit to its home position.
2. Attach the unfolded end of strong tape on the CR Unit, and pull the tape and apply it along the shapes of the Upper Housing Assy to the right side of the printer to secure the CR Unit.

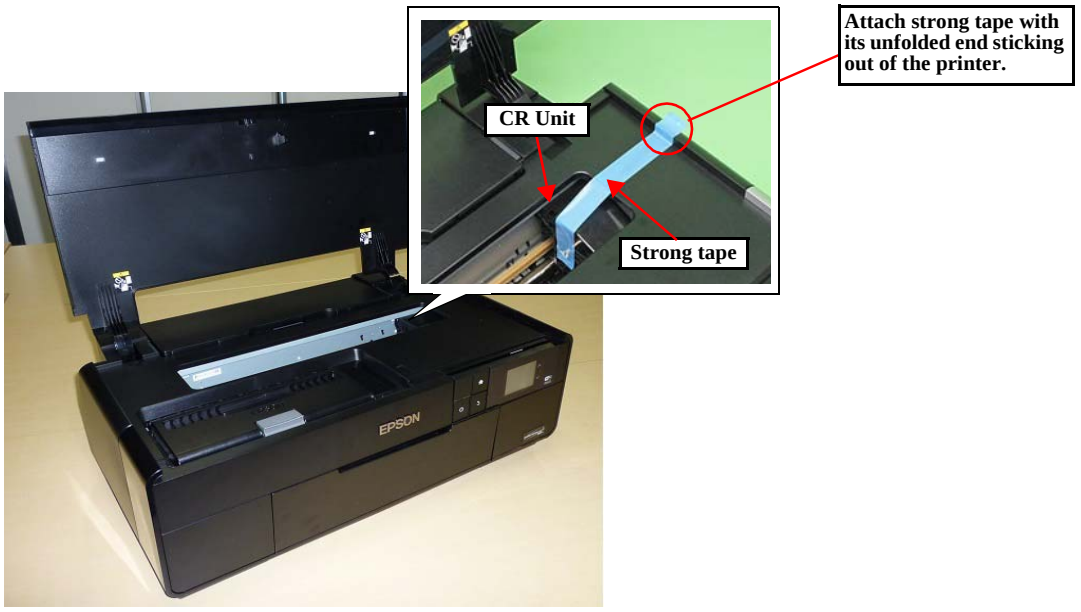
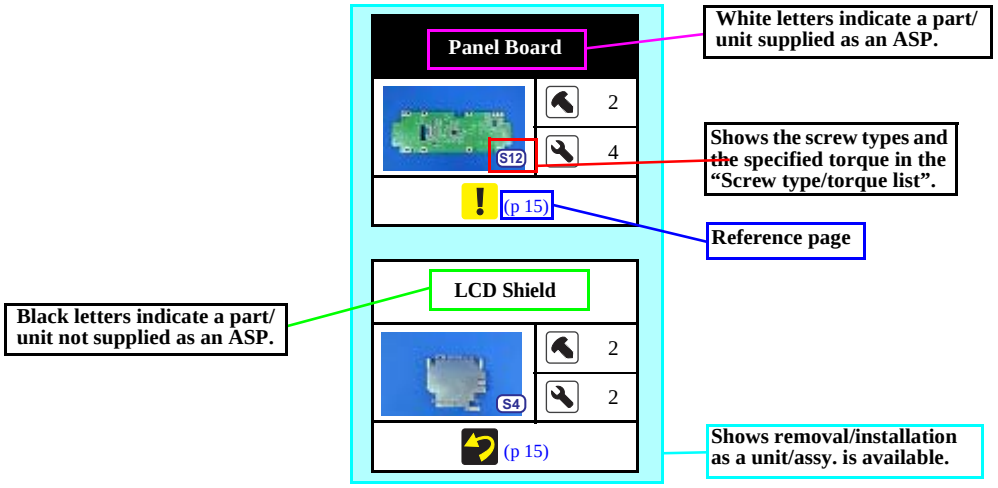


Figure 1-5. Securing the CR Unit

1.2 Disassembly/Reassembly Procedures

This section describes procedures for disassembling the parts/units in a flowchart format. For some parts/units, detailed procedures or precautions are provided (accordingly indicated by icons and cell's color). Refer to the explanations in the example chart below and perform an appropriate disassembling and assembling procedure. (See "1.3 Detailed Disassembly/Reassembly Procedure for each Part/Unit (p19)".)
For routing cables, see "1.4 Routing FFCs/cables (p28)".

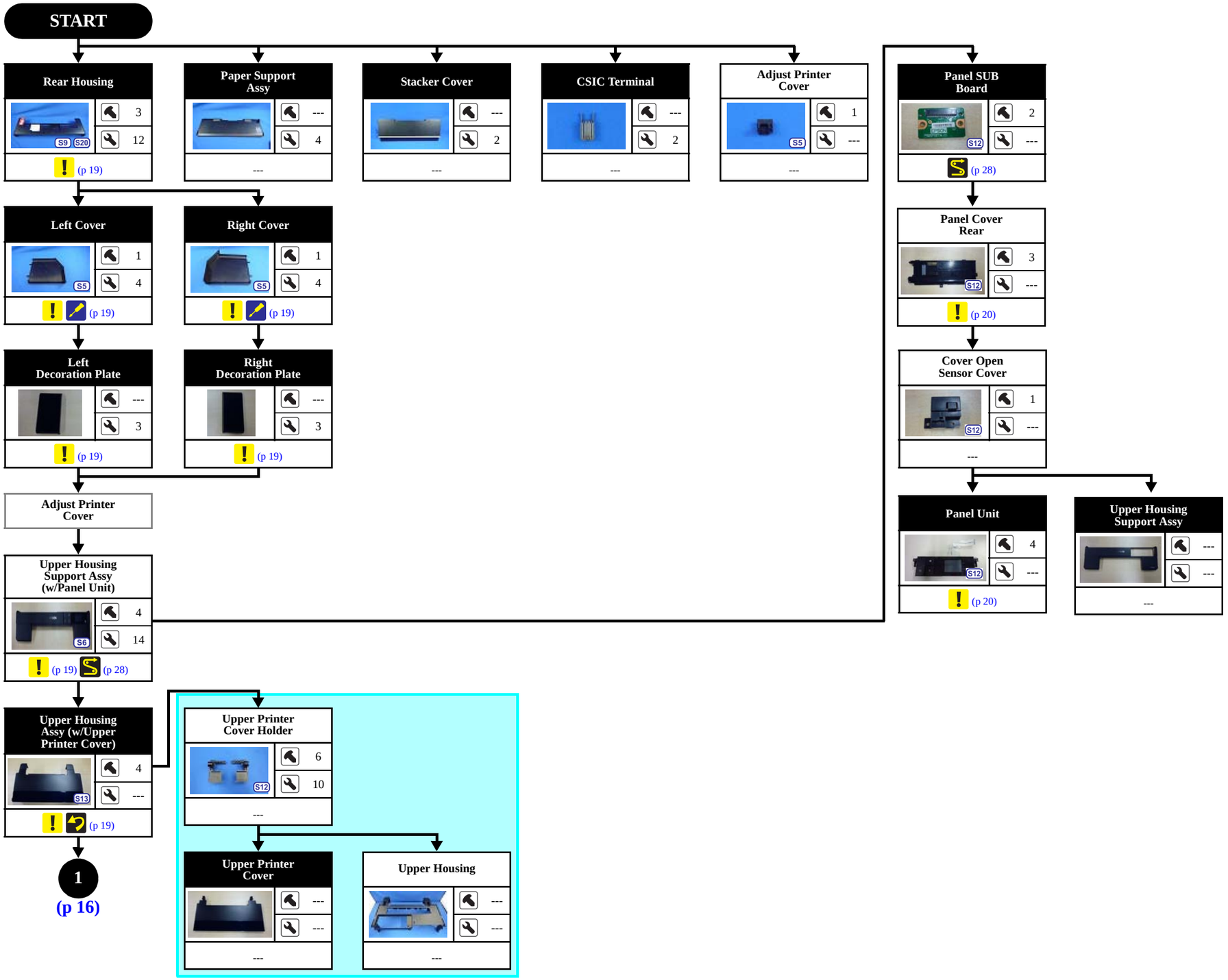
The example below shows how to see the charts on the following pages.



Item		Description	Reference
Parts/unit name	White-letter	Part/unit supplied as an ASP	---
	Black-letter	Part/unit not supplied as an ASP	---
Icon		Indicates a practice or condition that could result in injury or loss of life if not strictly observed.	Indicates the reference page in blue-letter
		Indicates a practice or condition that could result in damage to, or destruction of equipment if not strictly observed.	Indicates the reference page in blue-letter
		Indicates the parts that are inevitably broken in the disassembling procedure, and should be replaced with a new one for reassembly.	---
		Indicates necessary check items in the disassembling/ assembling procedure.	Indicates the reference page in blue-letter
		Indicates supplementary explanation for disassembly is given.	Indicates the reference page in blue-letter
		Indicates particular tasks to keep quality of the units are required.	Indicates the reference page in blue-letter
		Indicates particular routing of cables is required.	Indicates the reference page in blue-letter
		Indicates particular adjustment(s) is/are required.	Chapter 2 " Adjustment (p31)"
		Indicates lubrication is required.	Chapter 3 " Maintenance (p71)"
		Indicates the number of screws securing the parts/units.	---
		Indicates the points secured with other than a screw such as a hook, rib, dowel or the like	---
Arrowed line		Indicates a disassembling procedure.	---
		Indicates a removal procedure for a component of a part or unit which is necessary to remove when proceeding to the target part.	---

1.2.1 Disassembly/Reassembly Flowchart

1.2.1.1 Housing Part

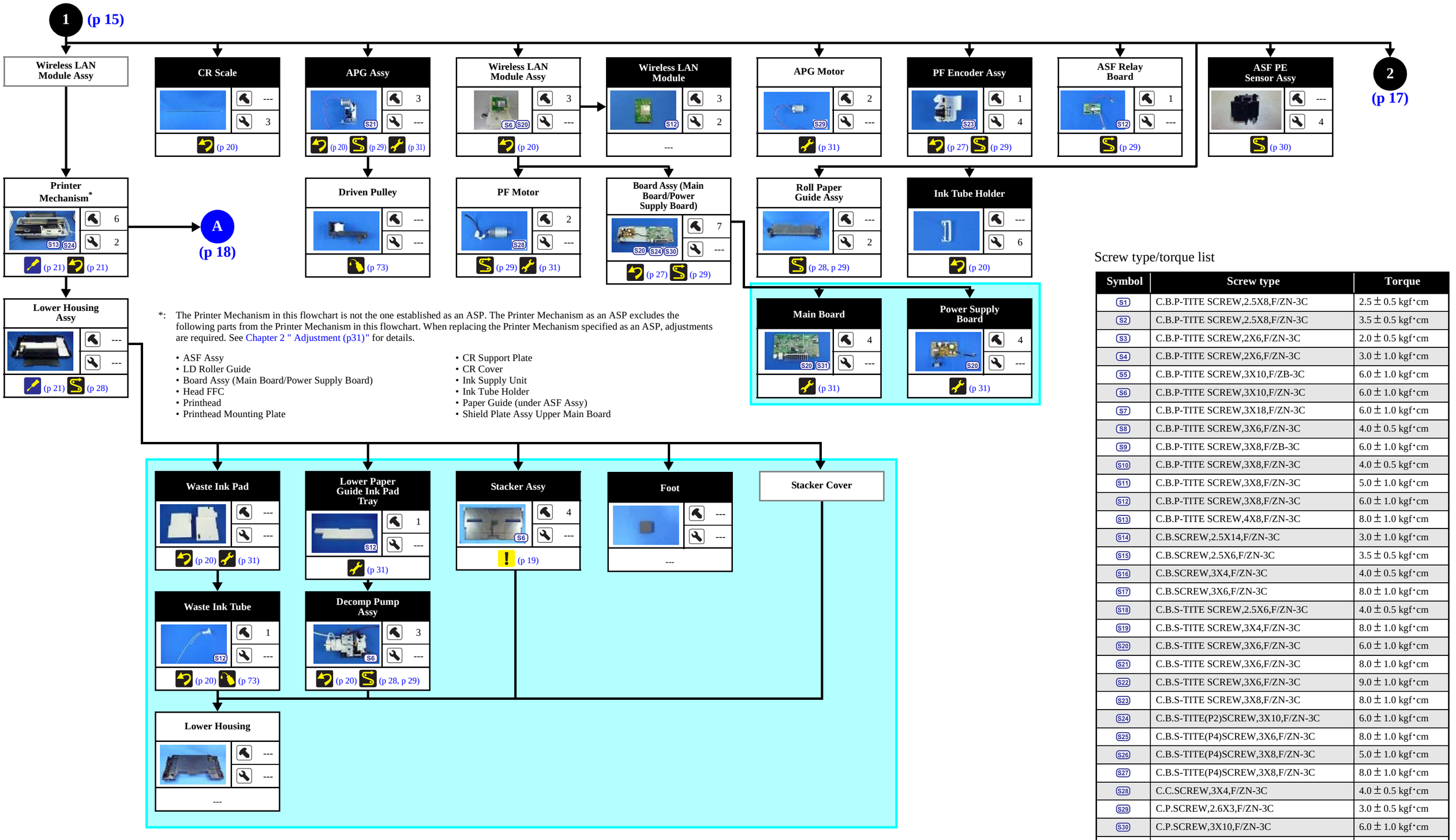


Screw type/torque list

Symbol	Screw type	Torque
S1	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	2.5 ± 0.5 kgf·cm
S2	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	3.5 ± 0.5 kgf·cm
S3	C.B.P-TITE SCREW,2X6,F/ZN-3C	2.0 ± 0.5 kgf·cm
S4	C.B.P-TITE SCREW,2X6,F/ZN-3C	3.0 ± 1.0 kgf·cm
S5	C.B.P-TITE SCREW,3X10,F/ZB-3C	6.0 ± 1.0 kgf·cm
S6	C.B.P-TITE SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S7	C.B.P-TITE SCREW,3X18,F/ZN-3C	6.0 ± 1.0 kgf·cm
S8	C.B.P-TITE SCREW,3X6,F/ZN-3C	4.0 ± 0.5 kgf·cm
S9	C.B.P-TITE SCREW,3X8,F/ZB-3C	6.0 ± 1.0 kgf·cm
S10	C.B.P-TITE SCREW,3X8,F/ZN-3C	4.0 ± 0.5 kgf·cm
S11	C.B.P-TITE SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf·cm
S12	C.B.P-TITE SCREW,3X8,F/ZN-3C	6.0 ± 1.0 kgf·cm
S13	C.B.P-TITE SCREW,4X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S14	C.B.SCREW,2.5X14,F/ZN-3C	3.0 ± 1.0 kgf·cm
S15	C.B.SCREW,2.5X6,F/ZN-3C	3.5 ± 0.5 kgf·cm
S16	C.B.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf·cm
S17	C.B.SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S18	C.B.S-TITE SCREW,2.5X6,F/ZN-3C	4.0 ± 0.5 kgf·cm
S19	C.B.S-TITE SCREW,3X4,F/ZN-3C	8.0 ± 1.0 kgf·cm
S20	C.B.S-TITE SCREW,3X6,F/ZN-3C	6.0 ± 1.0 kgf·cm
S21	C.B.S-TITE SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S22	C.B.S-TITE SCREW,3X6,F/ZN-3C	9.0 ± 1.0 kgf·cm
S23	C.B.S-TITE SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S24	C.B.S-TITE(P2)SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S25	C.B.S-TITE(P4)SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S26	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf·cm
S27	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S28	C.C.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf·cm
S29	C.P.SCREW,2.6X3,F/ZN-3C	3.0 ± 0.5 kgf·cm
S30	C.P.SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S31	C.P.SCREW,3X4,F/ZN-3C	6.0 ± 1.0 kgf·cm

Flowchart 1-1. Disassembly Flowchart of Housing Part

1.2.1.2 Printer Mechanism Part



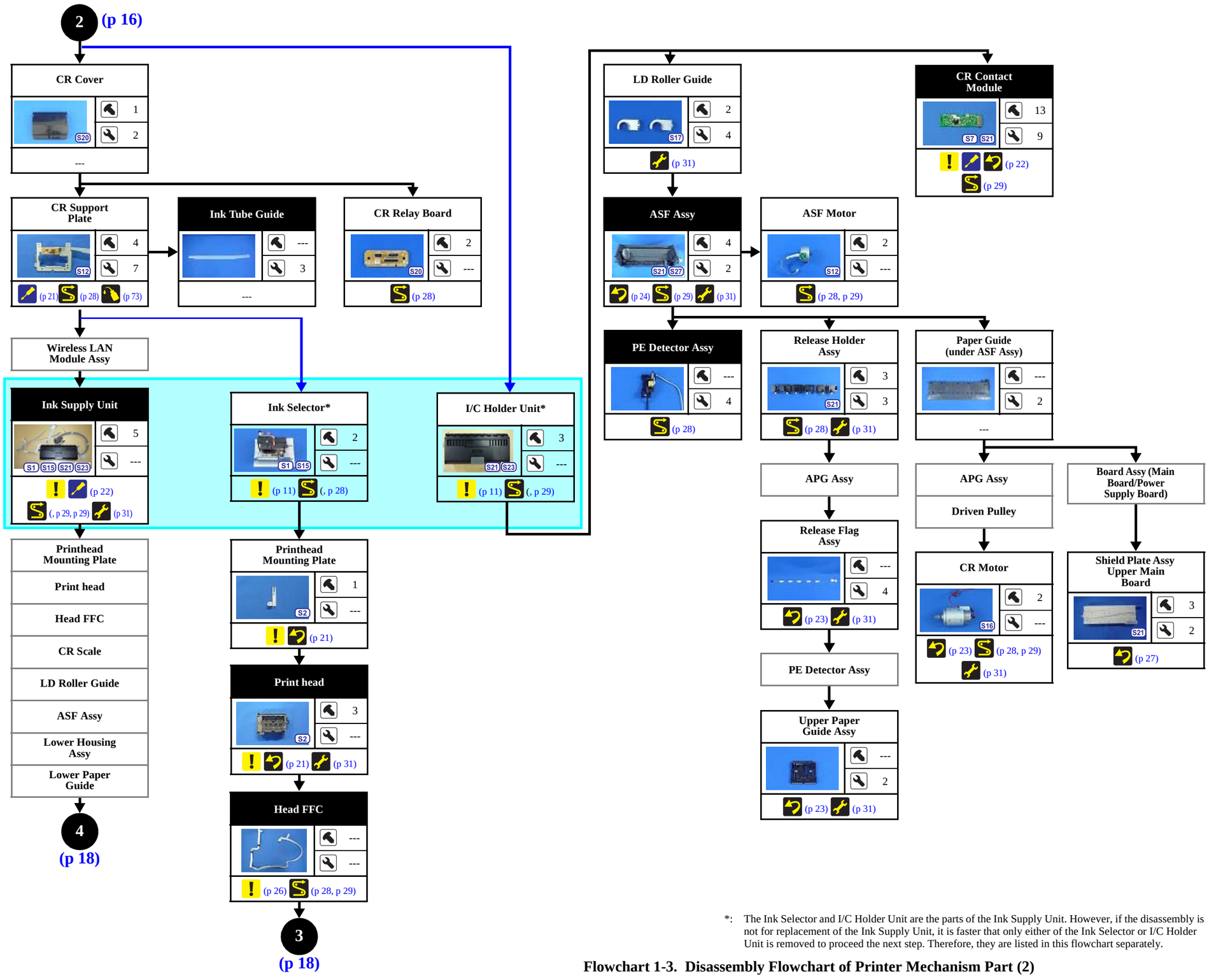
*: The Printer Mechanism in this flowchart is not the one established as an ASP. The Printer Mechanism as an ASP excludes the following parts from the Printer Mechanism in this flowchart. When replacing the Printer Mechanism specified as an ASP, adjustments are required. See Chapter 2 " Adjustment (p31)" for details.

- ASF Assy
- LD Roller Guide
- Board Assy (Main Board/Power Supply Board)
- Head FFC
- Printhead
- Printhead Mounting Plate
- CR Support Plate
- CR Cover
- Ink Supply Unit
- Ink Tube Holder
- Paper Guide (under ASF Assy)
- Shield Plate Assy Upper Main Board

Screw type/torque list

Symbol	Screw type	Torque
S1	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	2.5 ± 0.5 kgf･cm
S2	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	3.5 ± 0.5 kgf･cm
S3	C.B.P-TITE SCREW,2X6,F/ZN-3C	2.0 ± 0.5 kgf･cm
S4	C.B.P-TITE SCREW,2X6,F/ZN-3C	3.0 ± 1.0 kgf･cm
S5	C.B.P-TITE SCREW,3X10,F/ZB-3C	6.0 ± 1.0 kgf･cm
S6	C.B.P-TITE SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf･cm
S7	C.B.P-TITE SCREW,3X18,F/ZN-3C	6.0 ± 1.0 kgf･cm
S8	C.B.P-TITE SCREW,3X6,F/ZN-3C	4.0 ± 0.5 kgf･cm
S9	C.B.P-TITE SCREW,3X8,F/ZB-3C	6.0 ± 1.0 kgf･cm
S10	C.B.P-TITE SCREW,3X8,F/ZN-3C	4.0 ± 0.5 kgf･cm
S11	C.B.P-TITE SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf･cm
S12	C.B.P-TITE SCREW,3X8,F/ZN-3C	6.0 ± 1.0 kgf･cm
S13	C.B.P-TITE SCREW,4X8,F/ZN-3C	8.0 ± 1.0 kgf･cm
S14	C.B.SCREW,2.5X14,F/ZN-3C	3.0 ± 1.0 kgf･cm
S15	C.B.SCREW,2.5X6,F/ZN-3C	3.5 ± 0.5 kgf･cm
S16	C.B.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf･cm
S17	C.B.SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf･cm
S18	C.B.S-TITE SCREW,2.5X6,F/ZN-3C	4.0 ± 0.5 kgf･cm
S19	C.B.S-TITE SCREW,3X4,F/ZN-3C	8.0 ± 1.0 kgf･cm
S20	C.B.S-TITE SCREW,3X6,F/ZN-3C	6.0 ± 1.0 kgf･cm
S21	C.B.S-TITE SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf･cm
S22	C.B.S-TITE SCREW,3X6,F/ZN-3C	9.0 ± 1.0 kgf･cm
S23	C.B.S-TITE SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf･cm
S24	C.B.S-TITE(P2)SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf･cm
S25	C.B.S-TITE(P4)SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf･cm
S26	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf･cm
S27	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf･cm
S28	C.C.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf･cm
S29	C.P.SCREW,2.6X3,F/ZN-3C	3.0 ± 0.5 kgf･cm
S30	C.P.SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf･cm
S31	C.P.SCREW,3X4,F/ZN-3C	6.0 ± 1.0 kgf･cm

Flowchart 1-2. Disassembly Flowchart of Printer Mechanism Part (1)

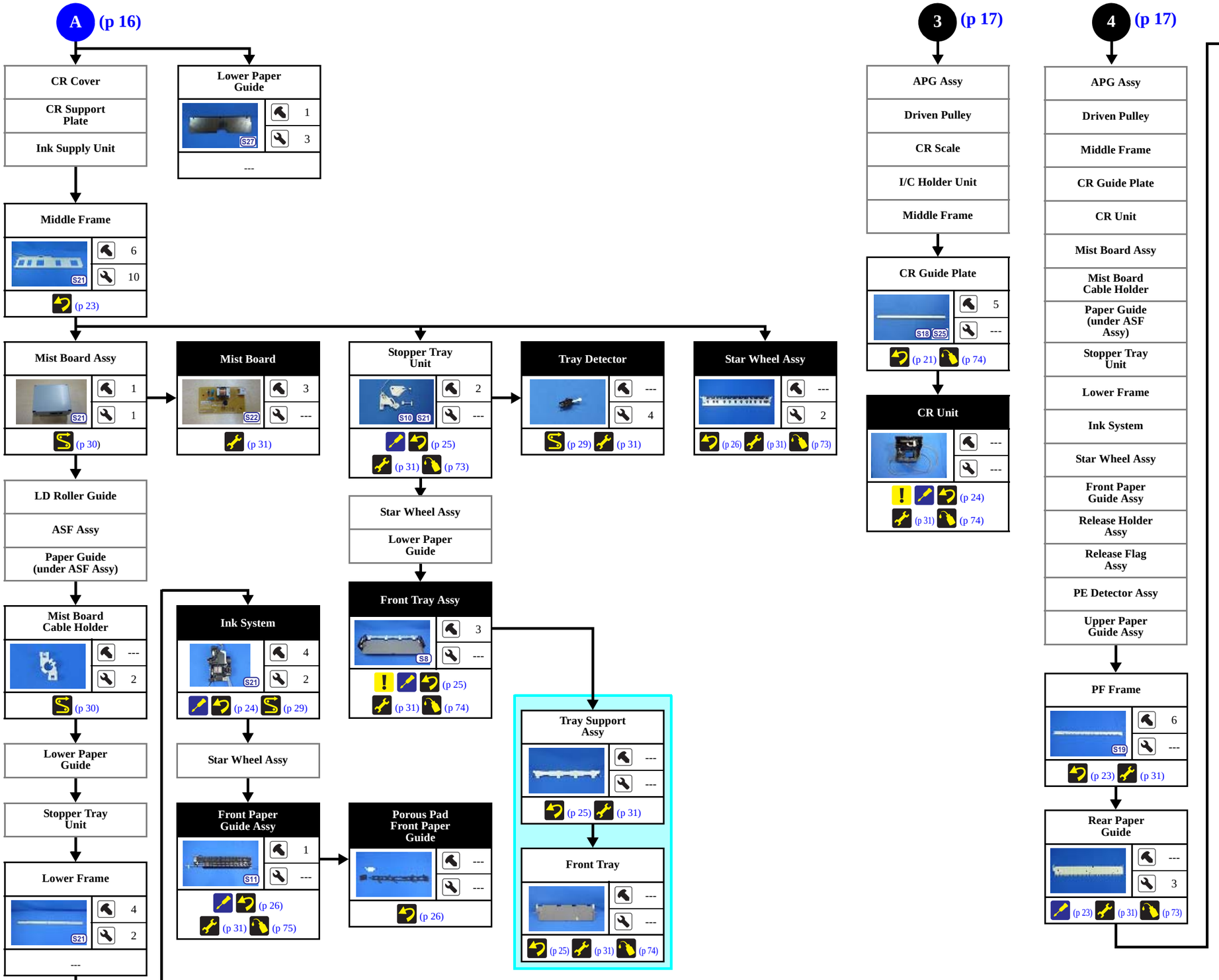


*: The Ink Selector and I/C Holder Unit are the parts of the Ink Supply Unit. However, if the disassembly is not for replacement of the Ink Supply Unit, it is faster that only either of the Ink Selector or I/C Holder Unit is removed to proceed the next step. Therefore, they are listed in this flowchart separately.

Flowchart 1-3. Disassembly Flowchart of Printer Mechanism Part (2)

Screw type/torque list

Symbol	Screw type	Torque
S1	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	2.5 ± 0.5 kgf·cm
S2	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	3.5 ± 0.5 kgf·cm
S3	C.B.P-TITE SCREW,2X6,F/ZN-3C	2.0 ± 0.5 kgf·cm
S4	C.B.P-TITE SCREW,2X6,F/ZN-3C	3.0 ± 1.0 kgf·cm
S5	C.B.P-TITE SCREW,3X10,F/ZB-3C	6.0 ± 1.0 kgf·cm
S6	C.B.P-TITE SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S7	C.B.P-TITE SCREW,3X18,F/ZN-3C	6.0 ± 1.0 kgf·cm
S8	C.B.P-TITE SCREW,3X6,F/ZN-3C	4.0 ± 0.5 kgf·cm
S9	C.B.P-TITE SCREW,3X8,F/ZB-3C	6.0 ± 1.0 kgf·cm
S10	C.B.P-TITE SCREW,3X8,F/ZN-3C	4.0 ± 0.5 kgf·cm
S11	C.B.P-TITE SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf·cm
S12	C.B.P-TITE SCREW,3X8,F/ZN-3C	6.0 ± 1.0 kgf·cm
S13	C.B.P-TITE SCREW,4X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S14	C.B.SCREW,2.5X14,F/ZN-3C	3.0 ± 1.0 kgf·cm
S15	C.B.SCREW,2.5X6,F/ZN-3C	3.5 ± 0.5 kgf·cm
S16	C.B.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf·cm
S17	C.B.SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S18	C.B.S-TITE SCREW,2.5X6,F/ZN-3C	4.0 ± 0.5 kgf·cm
S19	C.B.S-TITE SCREW,3X4,F/ZN-3C	8.0 ± 1.0 kgf·cm
S20	C.B.S-TITE SCREW,3X6,F/ZN-3C	6.0 ± 1.0 kgf·cm
S21	C.B.S-TITE SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S22	C.B.S-TITE SCREW,3X6,F/ZN-3C	9.0 ± 1.0 kgf·cm
S23	C.B.S-TITE SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S24	C.B.S-TITE(P2)SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S25	C.B.S-TITE(P4)SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S26	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf·cm
S27	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S28	C.C.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf·cm
S29	C.P.SCREW,2.6X3,F/ZN-3C	3.0 ± 0.5 kgf·cm
S30	C.P.SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S31	C.P.SCREW,3X4,F/ZN-3C	6.0 ± 1.0 kgf·cm



Screw type/torque list

Symbol	Screw type	Torque
S1	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	2.5 ± 0.5 kgf·cm
S2	C.B.P-TITE SCREW,2.5X8,F/ZN-3C	3.5 ± 0.5 kgf·cm
S3	C.B.P-TITE SCREW,2X6,F/ZN-3C	2.0 ± 0.5 kgf·cm
S4	C.B.P-TITE SCREW,2X6,F/ZN-3C	3.0 ± 1.0 kgf·cm
S5	C.B.P-TITE SCREW,3X10,F/ZB-3C	6.0 ± 1.0 kgf·cm
S6	C.B.P-TITE SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S7	C.B.P-TITE SCREW,3X18,F/ZN-3C	6.0 ± 1.0 kgf·cm
S8	C.B.P-TITE SCREW,3X6,F/ZN-3C	4.0 ± 0.5 kgf·cm
S9	C.B.P-TITE SCREW,3X8,F/ZB-3C	6.0 ± 1.0 kgf·cm
S10	C.B.P-TITE SCREW,3X8,F/ZN-3C	4.0 ± 0.5 kgf·cm
S11	C.B.P-TITE SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf·cm
S12	C.B.P-TITE SCREW,3X8,F/ZN-3C	6.0 ± 1.0 kgf·cm
S13	C.B.P-TITE SCREW,4X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S14	C.B.SCREW,2.5X14,F/ZN-3C	3.0 ± 1.0 kgf·cm
S15	C.B.SCREW,2.5X6,F/ZN-3C	3.5 ± 0.5 kgf·cm
S16	C.B.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf·cm
S17	C.B.SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S18	C.B.S-TITE SCREW,2.5X6,F/ZN-3C	4.0 ± 0.5 kgf·cm
S19	C.B.S-TITE SCREW,3X4,F/ZN-3C	8.0 ± 1.0 kgf·cm
S20	C.B.S-TITE SCREW,3X6,F/ZN-3C	6.0 ± 1.0 kgf·cm
S21	C.B.S-TITE SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S22	C.B.S-TITE SCREW,3X6,F/ZN-3C	9.0 ± 1.0 kgf·cm
S23	C.B.S-TITE SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S24	C.B.S-TITE(P2)SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S25	C.B.S-TITE(P4)SCREW,3X6,F/ZN-3C	8.0 ± 1.0 kgf·cm
S26	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	5.0 ± 1.0 kgf·cm
S27	C.B.S-TITE(P4)SCREW,3X8,F/ZN-3C	8.0 ± 1.0 kgf·cm
S28	C.C.SCREW,3X4,F/ZN-3C	4.0 ± 0.5 kgf·cm
S29	C.P.SCREW,2.6X3,F/ZN-3C	3.0 ± 0.5 kgf·cm
S30	C.P.SCREW,3X10,F/ZN-3C	6.0 ± 1.0 kgf·cm
S31	C.P.SCREW,3X4,F/ZN-3C	6.0 ± 1.0 kgf·cm

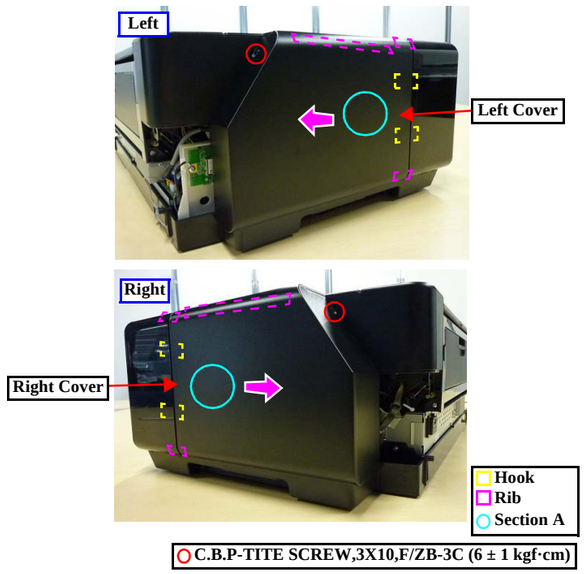
Flowchart 1-4. Disassembly Flowchart of Printer Mechanism Part (3)

1.3 Detailed Disassembly/Reassembly Procedure for each Part/Unit

Rear Housing

Be careful not to damage the hooks (x2), dowels (x2) and ribs (x8) that secure the Rear Housing.

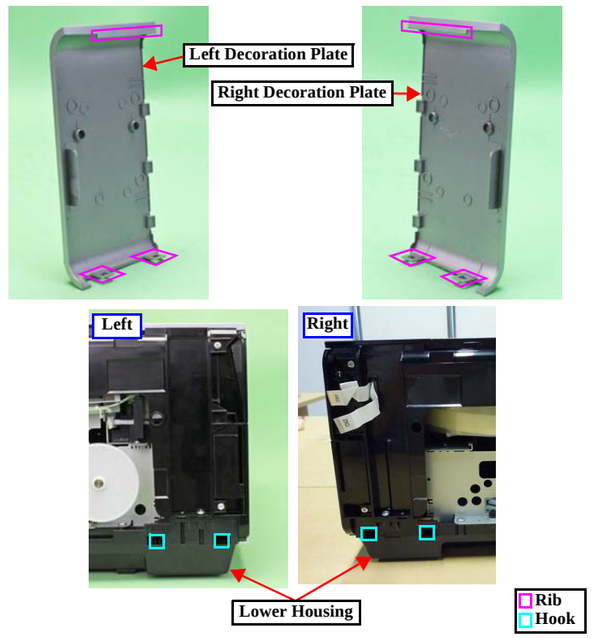
Left / Right Cover



Remove the Left/Right Cover carefully not to damage the hooks (x2 each) and ribs (x3 each) that secure the Left/Right Cover.

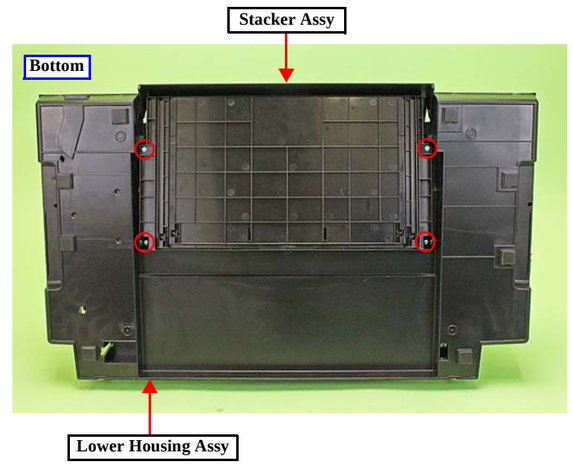
When removing the Left/Right Cover, slide it in the direction of the arrow shown above while slightly pushing the section A.

Left / Right Decoration Plate



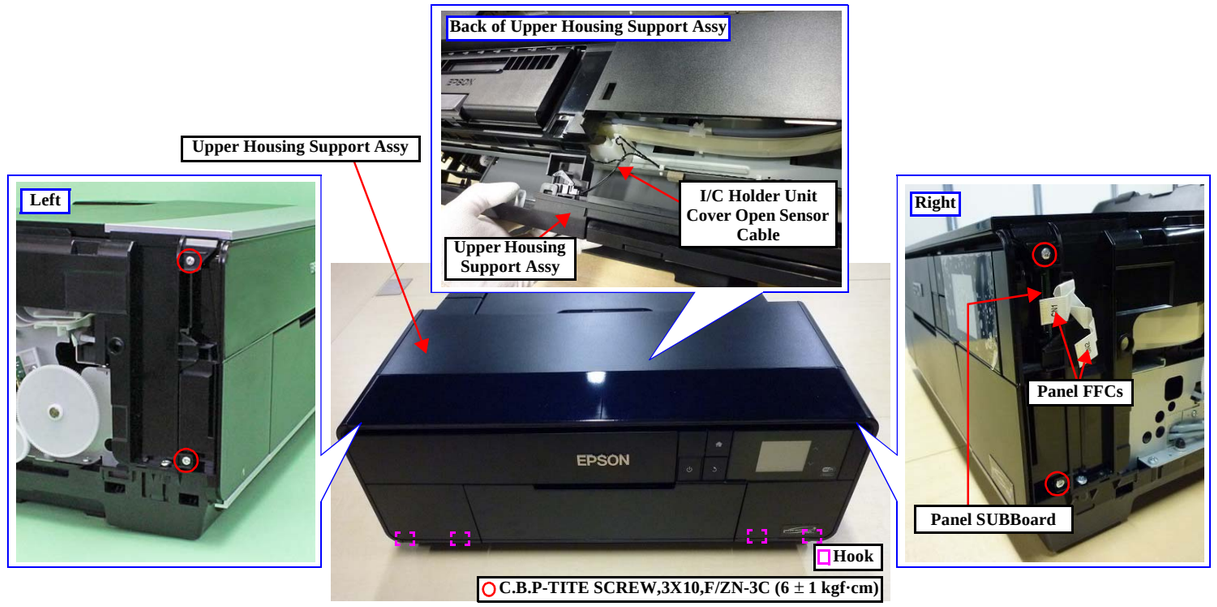
Be careful not to damage the ribs (x3 each) that secure the Left/ Right Decoration Plate and hooks (x4) of the Lower Housing.

Stacker Assy



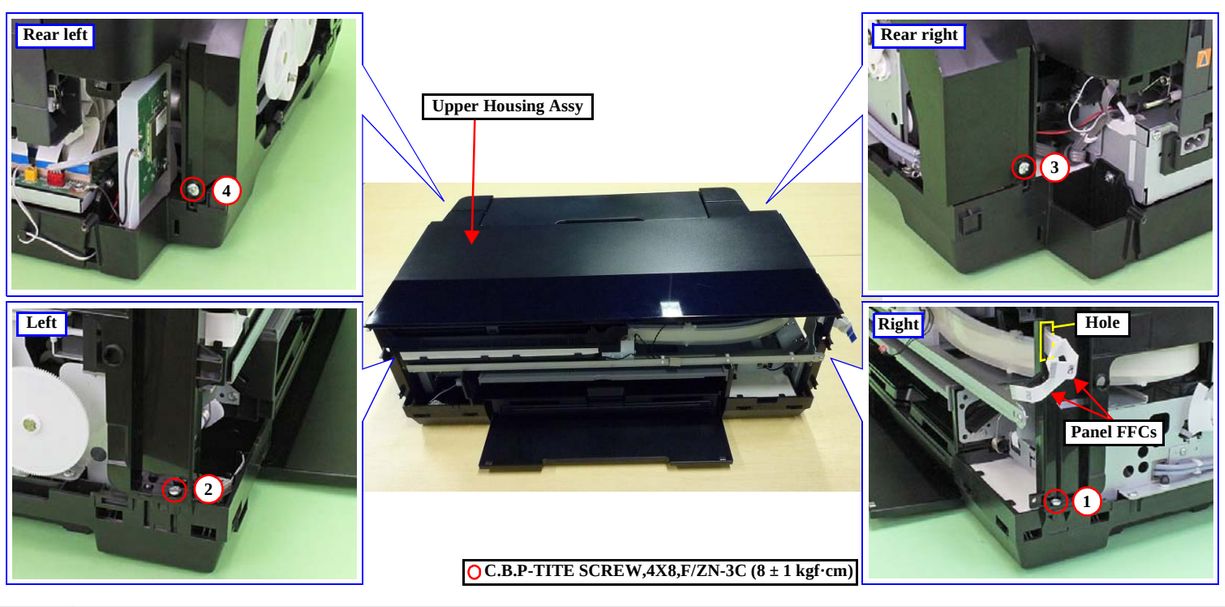
Be careful for ink to flow out then because if tilting is too soon after the initial ink charge or a similar situation, the ink still on the Waste Ink Pad which is not yet absorbed flows over out of the printer.

Upper Housing Support Assy (w/Panel Unit)



- Disconnect the Panel FFCs (x2) from the connectors on the Panel SUB Board before removing the Upper Housing Support Assy.
- Be careful not to damage the hooks (x4) that secure the Upper Housing Support Assy.
- Be careful to remove the Upper Housing Support Assy because the I/C Holder Unit Cover Open Sensor Cable is connected to the sensor on the back of the Upper Housing Support Assy.

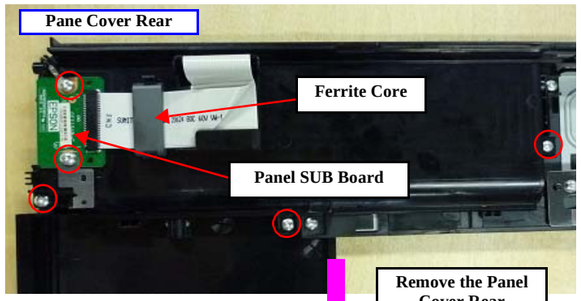
Upper Housing Assy (w/Printer Cover Upper)



Pull out the Panel FFCs(x2) from the hole of the Upper Housing Assy before removing the Upper Housing Assy.

Tighten the screws in the order indicated in the figure above.

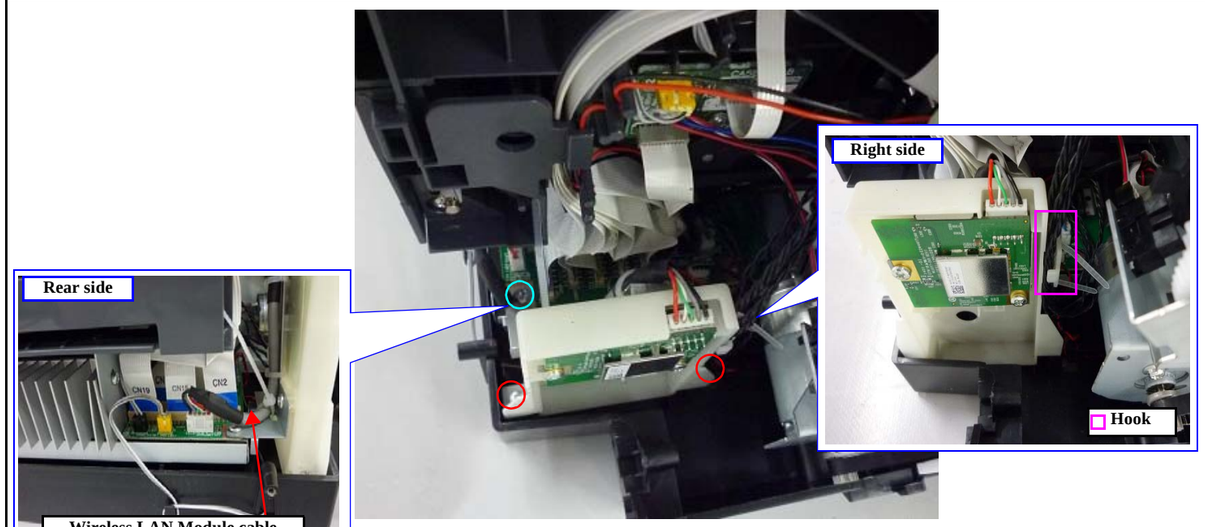
Panel Unit



○ C.B.P-TITE SCREW,3X8,F/ZN-3C (6 ± 1 kgf·cm)

When disassembling the Panel Unit, take off the fixed screws (x4) of the shafts that of Housing Panel Rear. Then remove the unit from the Housing Upper Support Assy by turning the whole unit forward.

Wireless LAN Module Assy

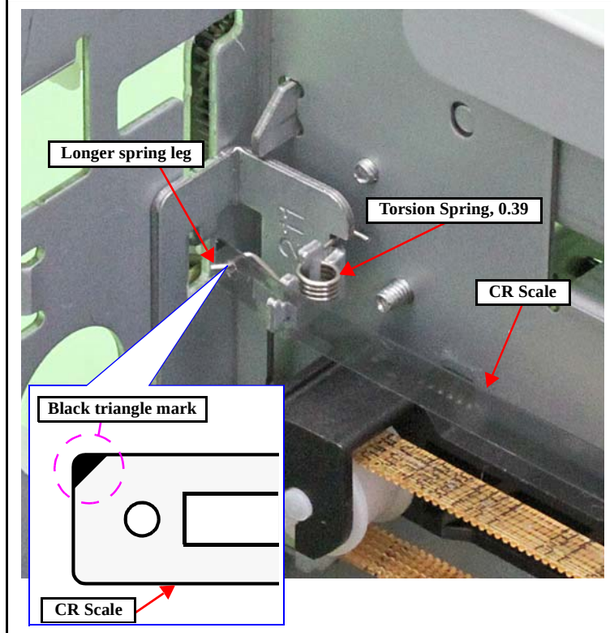


○ C.B.P-TITE SCREW,3X10,F/ZN-3C (6±1 kgf•cm)
○ C.B.S-TITE SCREW,3X6,F/ZN-3C (6±1 kgf•cm)

When installing the Wireless LAN Module Assy, put the following four cables through a hook of the part right side.

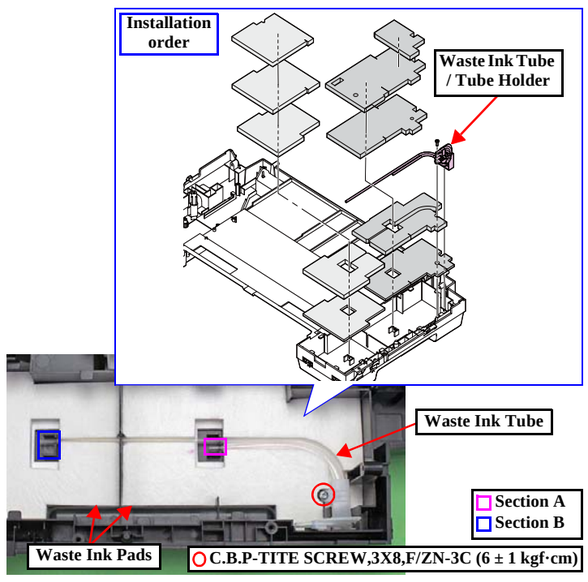
- Printer Cover Open Sensor cable
- I/C Holder Unit Cover Open Sensor cable
- Mist Board cable
- ASF PE Sensor Cable

CR Scale



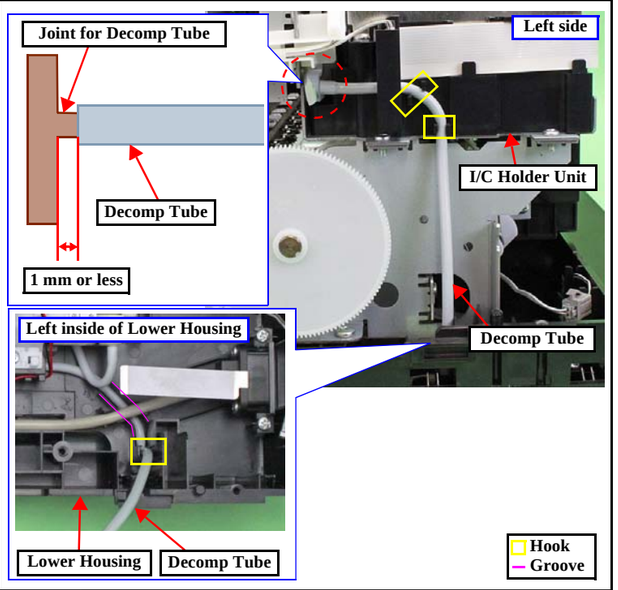
■ Attach the CR Scale to the spring leg with the black triangle mark upward on the left side of the printer.
■ Attach the Torsion Spring, 0.39 as shown above.

Waste Ink Tube / Waste Ink Pad



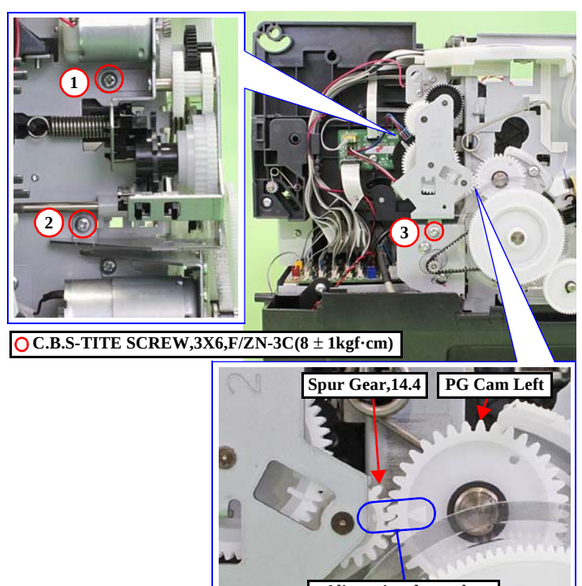
■ When installing the Waste Ink Tube/Waste Ink Pads (x10), confirm the shapes of them and install them in the order shown above.
■ When installing the Waste Ink Tube, route it through the groove of the Waste Ink Pads, and insert the end of the shorter tube to the section A and longer one to the section B.

Decomp Pump Assy



■ When connecting the Decomp Tube to the joint of the I/C Holder Unit, make sure the gap between the end of the Decomp Tube to the base of the joint is 1 mm or less, and then secure the tube with the hooks (x2).
■ Route the Decomp Tube through the groove of the Lower Housing and secure the tube with the hook.

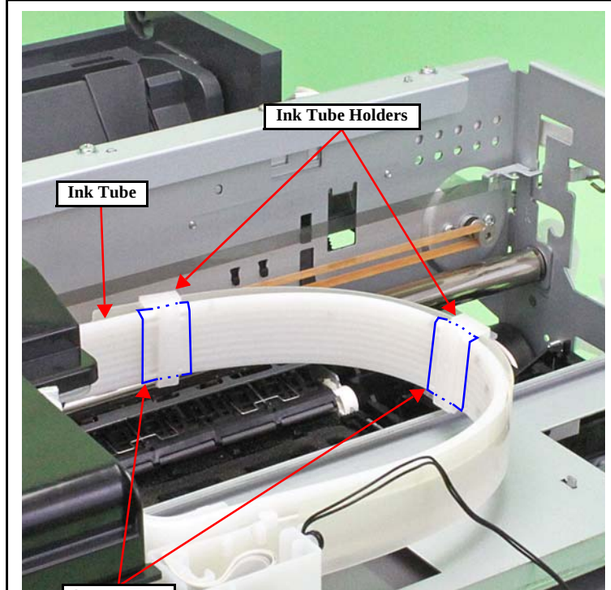
APG Assy



○ C.B.S-TITE SCREW,3X6,F/ZN-3C(8 ± 1kgf·cm)

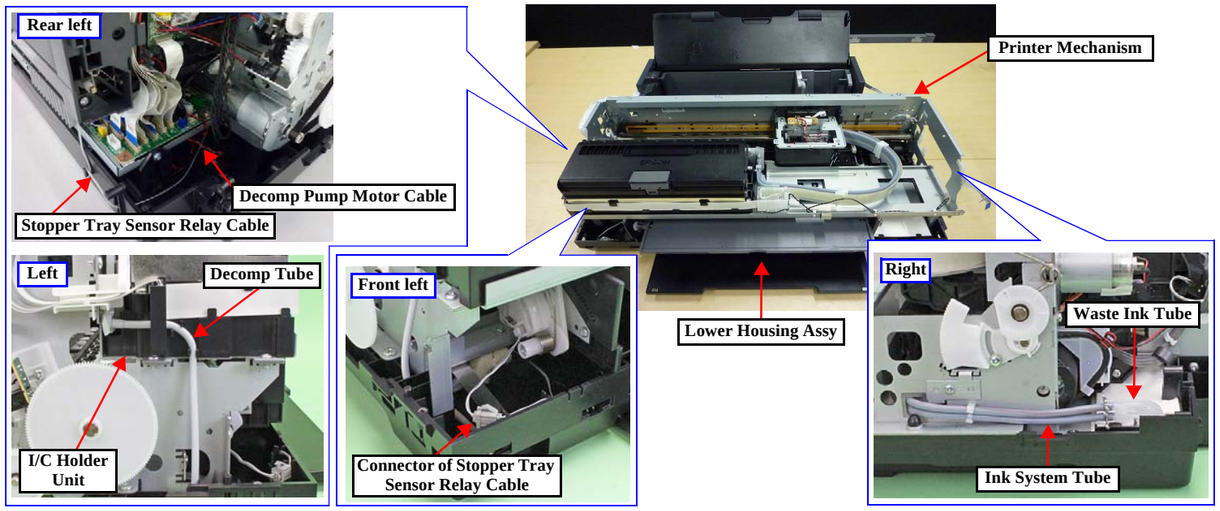
■ When installing the APG Assy, align the marks on the Spur Gear,14.4 and PG Cam Left to match their phases as shown above.
■ Tighten the screws in the order indicated in the figure above.

Ink Tube Holder



When installing the Ink Tube Holders (x2), install them on the locations where the acetate tape (x2) is attached on the Ink Tube.

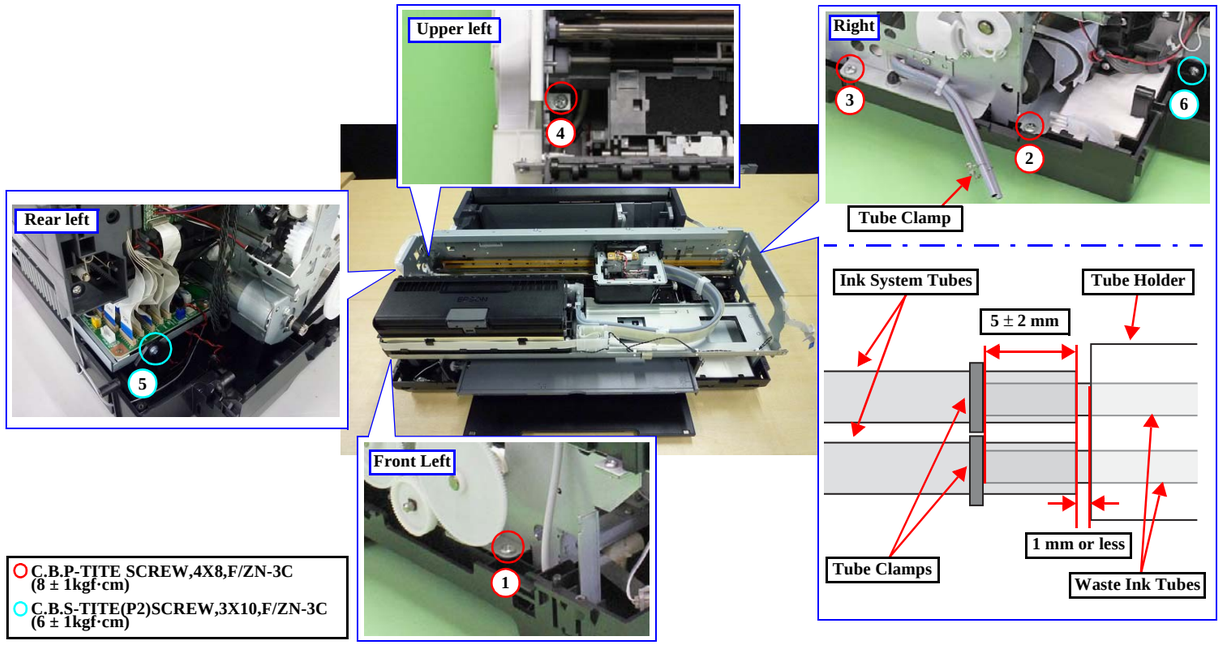
Printer Mechanism (1)



Disconnect the following cables/tubes when removing the Printer Mechanism from the Lower Housing Assy.

- Disconnect the following cables from the connector on the Main Board.
  - Stopper Tray Sensor Relay Cable (CN1)
  - Decomp Pump Motor Cable (CN22)
- Disconnect the Decomp Tube.
- Disconnect the Ink System Tube from the Waste Ink Tube.
- Disconnect the relay connector of the Stopper Tray Sensor Relay Cable.

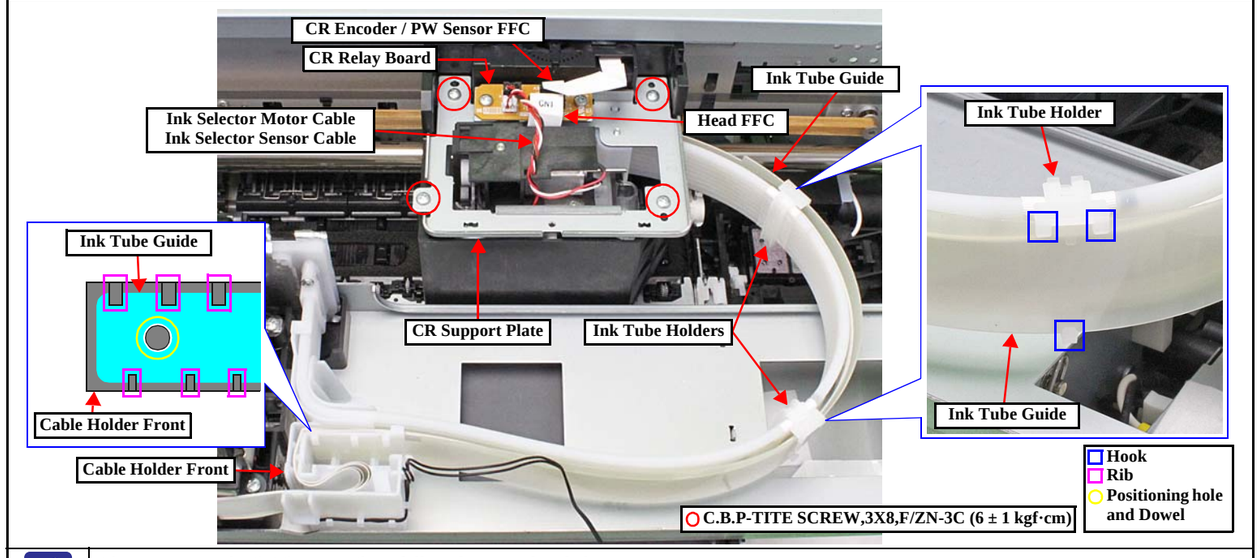
Printer Mechanism (2)



○ C.B.P-TITE SCREW,4X8,F/ZN-3C (8 ± 1kgf·cm)
○ C.B.S-TITE(P2)SCREW,3X10,F/ZN-3C (6 ± 1kgf·cm)

- Tighten the screws in the order indicated in the figure above.
- When connecting the Ink System Tube to the Waste Ink Tube, make sure the gap between the end of the Ink System Tube and the Tube Holder is 1 mm or less, and attach the Tube Clamp 5 ± 2 mm from the end of the Ink System Tube.

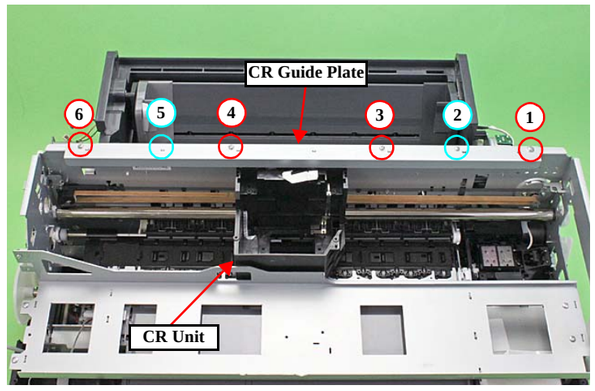
CR Support Plate



When removing the CR Support Plate, follow the procedure below.

1. Disconnect the following cables/FFCs from the connectors on the CR Relay Board.
   - Ink Selector Motor Cable (CN2)
   - Ink Selector Sensor Cable (CN5)
   - Head FFC (CN1)
   - CR Encoder / PW Sensor FFC (CN6)
2. Remove the screws (x4) that secure the CR Support Plate.
3. Release the hooks (x3 each) of the Ink Tube Holders (x2) and remove the Ink Tube Guide from the Ink Tube Holders (x2).
4. Release the Ink Tube Guide from the ribs (x6) and dowel of the Cable Holder Front, and remove the CR Support Plate.

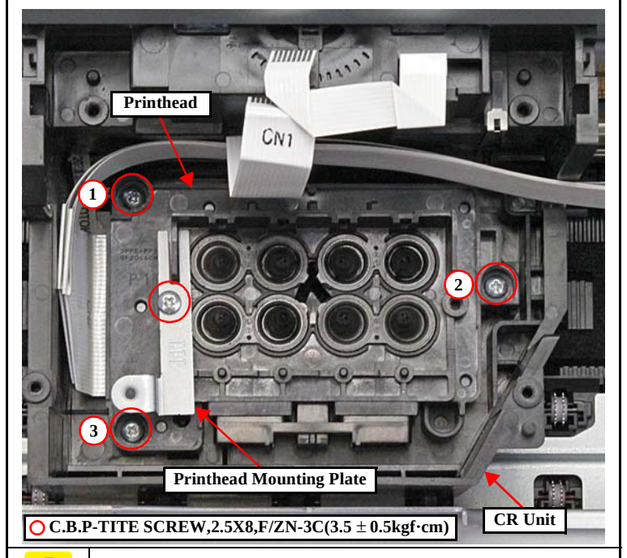
CR Guide Plate



○ C.B.S-TITE(P4)SCREW,3X6,F/ZN-3C(8 ± 1kgf·cm)
○ C.B.S-TITE SCREW,2.5X6,F/ZN-3C(4 ±

Tighten the screws in the order indicated in the figure above.

Printhead / Printhead Mounting Plate

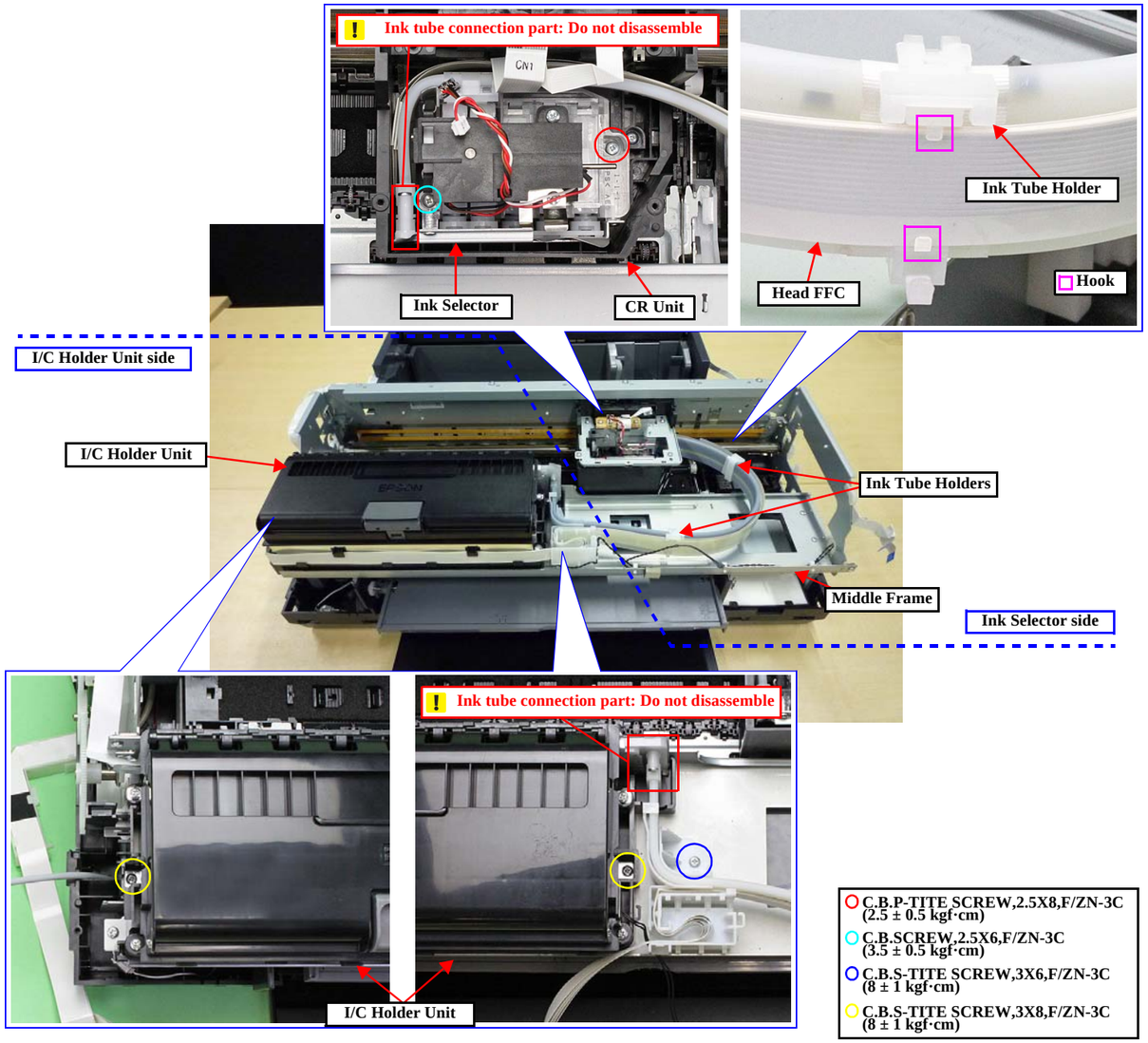


Do not use the electric screwdriver when installing the Printhead and/or the Printhead Mounting Plate. Doing so applies extra force when tightening the screw and affects the platen gap.

When installing the Printhead, follow the procedure below.

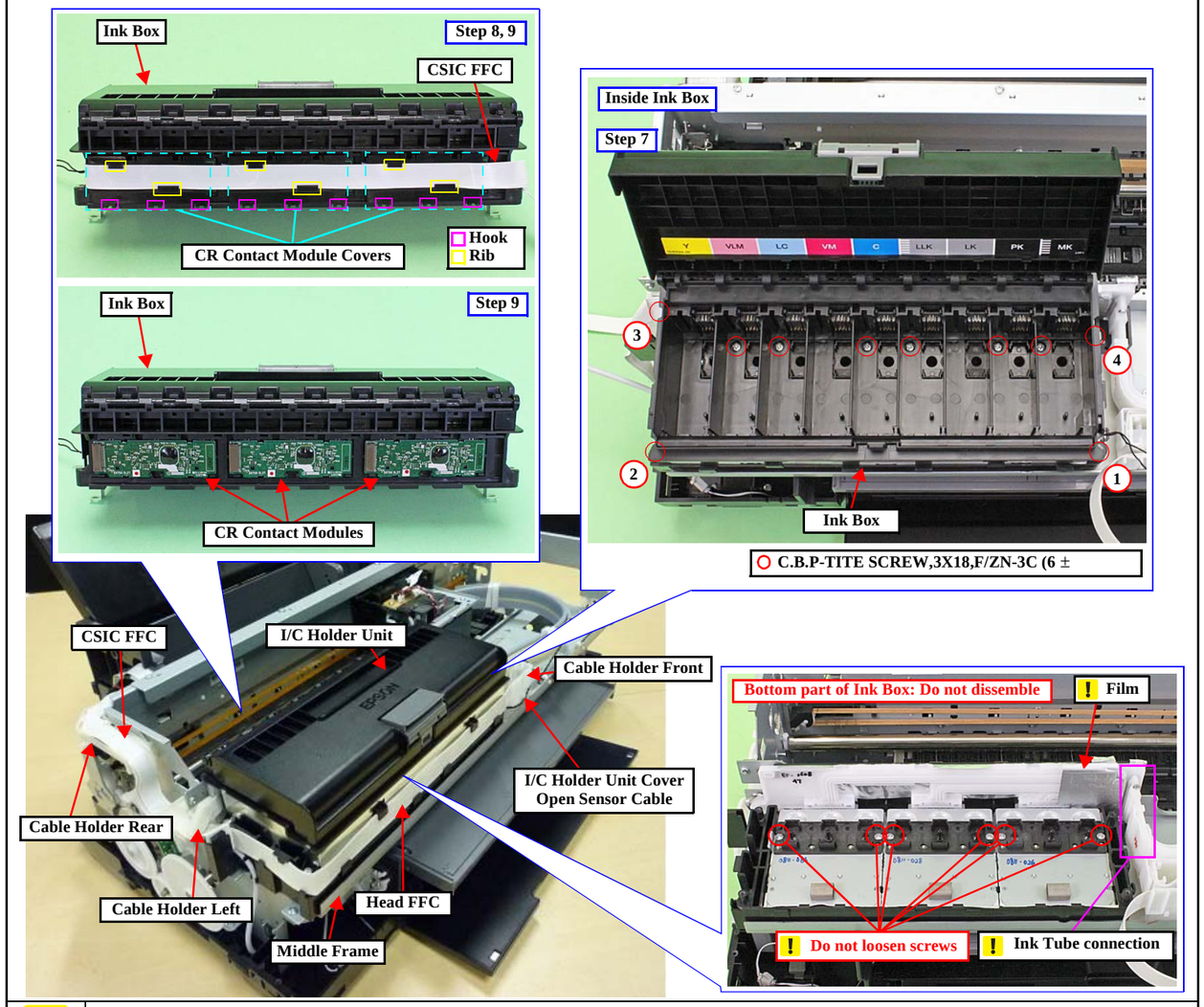
1. Temporarily tighten the screws (x3) and loosen them half turn.
2. Press the Printhead to the rear of the printer, and tighten the screws (x3) in the order indicated in the figure above.

Ink Supply Unit



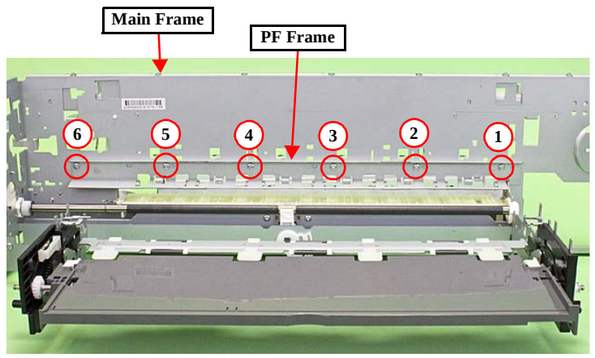
!	To prevent ink leakage, make sure not to separate the ink tubes from the I/C Holder Unit or the Ink Selector by removing the screws (x2). Loosening the screws even just once will cause ink leakage, therefore, make sure to replace the Ink Supply Unit with a new one.
	■ When removing the Ink Supply Unit, follow the procedure below. 1. Release the Head FFC from the hooks (x2 each) of the Ink Tube Holders (x2). Be careful not to damage the Head FFC then. 2. Remove the screws (x2) that secure the Ink Selector, and remove the Ink Selector from the CR Unit. 3. Disconnect the Decomp Tube from the I/C Holder Unit. (p 21) 4. After removing the Cable Holder Rear and Cable Holder Left from the frame, disconnect the Head FFC and CSIC FFC from the connectors on the Main Board, and then release the FFCs from the Cable Holder Rear and Cable Holder Left. (p 29) 5. Remove the screws (x3) that secure the I/C Holder Unit, and remove the I/C Holder Unit. ■ When removing the Ink Selector on the way to the target part, perform only Step 1 and 2 above. Be careful not to contaminate the surroundings with ink from the Ink Selector when taking subsequent steps. ■ When removing the I/C Holder Unit on the way to the target part, perform only Step 3 to 5 above. Place the removed I/C Holder Unit on the 0-digit side of the Middle Frame when taking subsequent steps.
	Do not use the electric screwdriver when installing the Printhead. Doing so applies extra force when tightening the screw and affects the platen gap.

CR Contact Module



!	To prevent ink leakage, make sure of the following when disassembling/reassembling the unit. ■ Do not remove the screws (x6) on the bottom of the Ink Box. Loosening the screws even just once will cause ink leakage, therefore, make sure to replace the Ink Supply Unit with a new one. ■ Be careful not to damage the film of the ink path. ■ Be careful not to apply extra force on the Ink Tube connection.
	When removing the CR Contact Modules (x3), follow the procedure below. 1. Disconnect the Head FFC and CSIC FFC from the connectors on the Main Board, and remove the Cable Holder Rear and Cable Holder Left from the frame. (p 29) 2. Remove the Cable Holder Rear and Cable Holder Left from the CSIC FFC. (p 29) 3. Release the Head FFC from the ribs of the I/C Holder Unit. (p 28) 4. Release the I/C Holder Unit Cover Open Sensor Cable from the rib and hook of the Cable Holder Front. (p 28) 5. Remove the screws (x3) that secure the I/C Holder Unit. (p 22) 6. Remove the screws (x4) on the corners of the Ink Box and screws (x6) inside the Ink Box that secure the Ink Box. 7. Release the CSIC FFCs (x3) from the ribs (x6) of the Ink Box, and disconnect the CSIC FFCs (x3) from the connectors on the CR Contact Modules (x3). 8. Release the hooks (x3 each) of the CR Contact Module Covers, and remove the CR Contact Module Covers and CR Contact Modules.
	Tighten the screws in the order indicated in the figure above when securing the screws (x4) on the corner of the Ink Box.

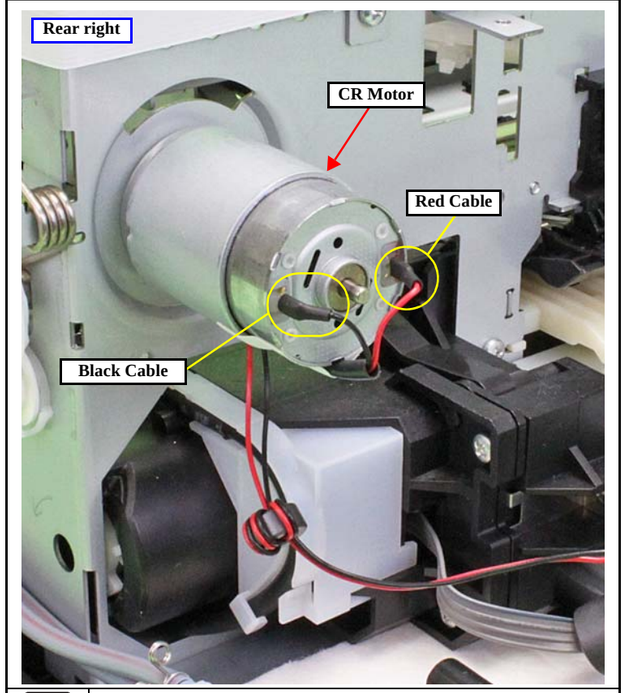
PF Frame



○ C.B.S-TITE SCREW,3X4,F/ZN-3C(8 ± 1kgf·cm)

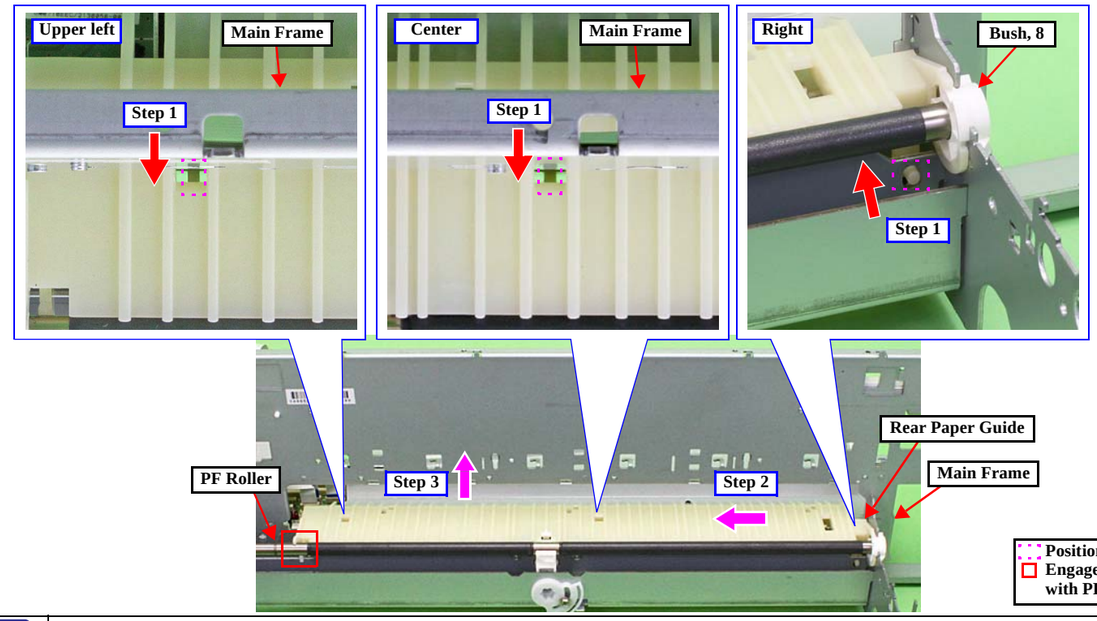
Tighten the screws in the order indicated in the figure above.

CR Motor



When installing the CR Motor, attach it with its red cable to the left side of the printer.

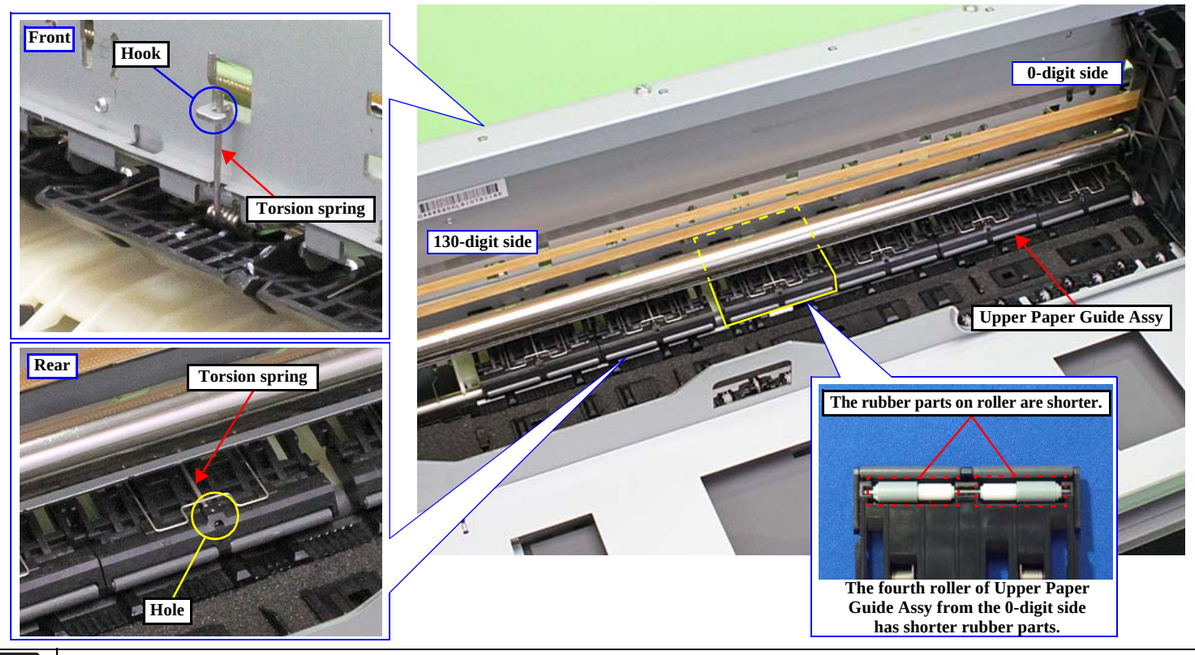
Rear Paper Guide



When removing the Rear Paper Guide, follow the procedure below.

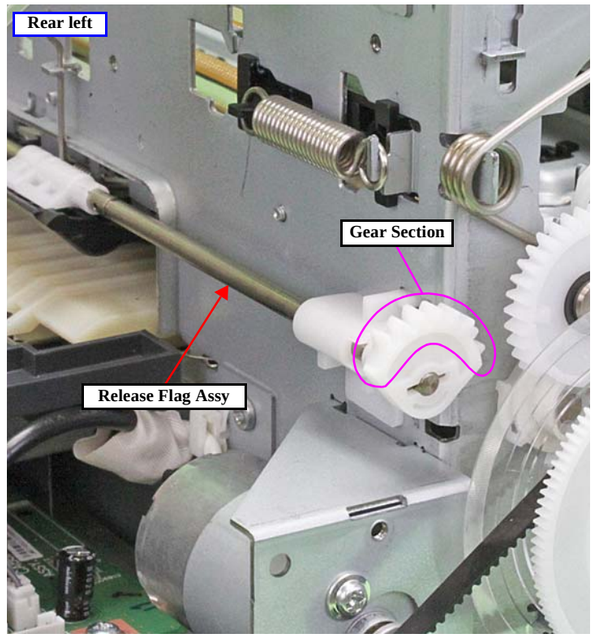
1. Push the positioning dowels (x3) in the direction of the red arrow to release them.
2. Slide the Rear Paper Guide approx. 5 mm to the left to release the right side of the Rear Paper Guide from the Bush, 8.
3. Lift the rear side of the Rear Paper Guide and release it from the PF Roller, and then remove the Rear paper Guide.

Upper Paper Guide Assy



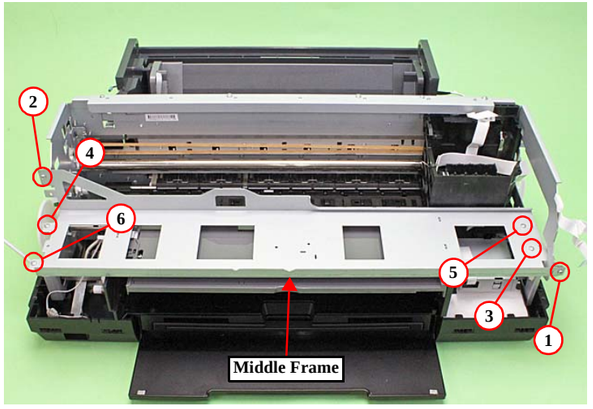
- Make sure to install the Upper Paper Guide Assy whose roller has shorter rubber parts on the fourth position from 0-digit side.
- When attaching the torsion spring, insert the spring leg (straight side) into the hole of the Upper Paper Guide Assy, and engage the other leg to the hook of the frame.

Release Flag Assy



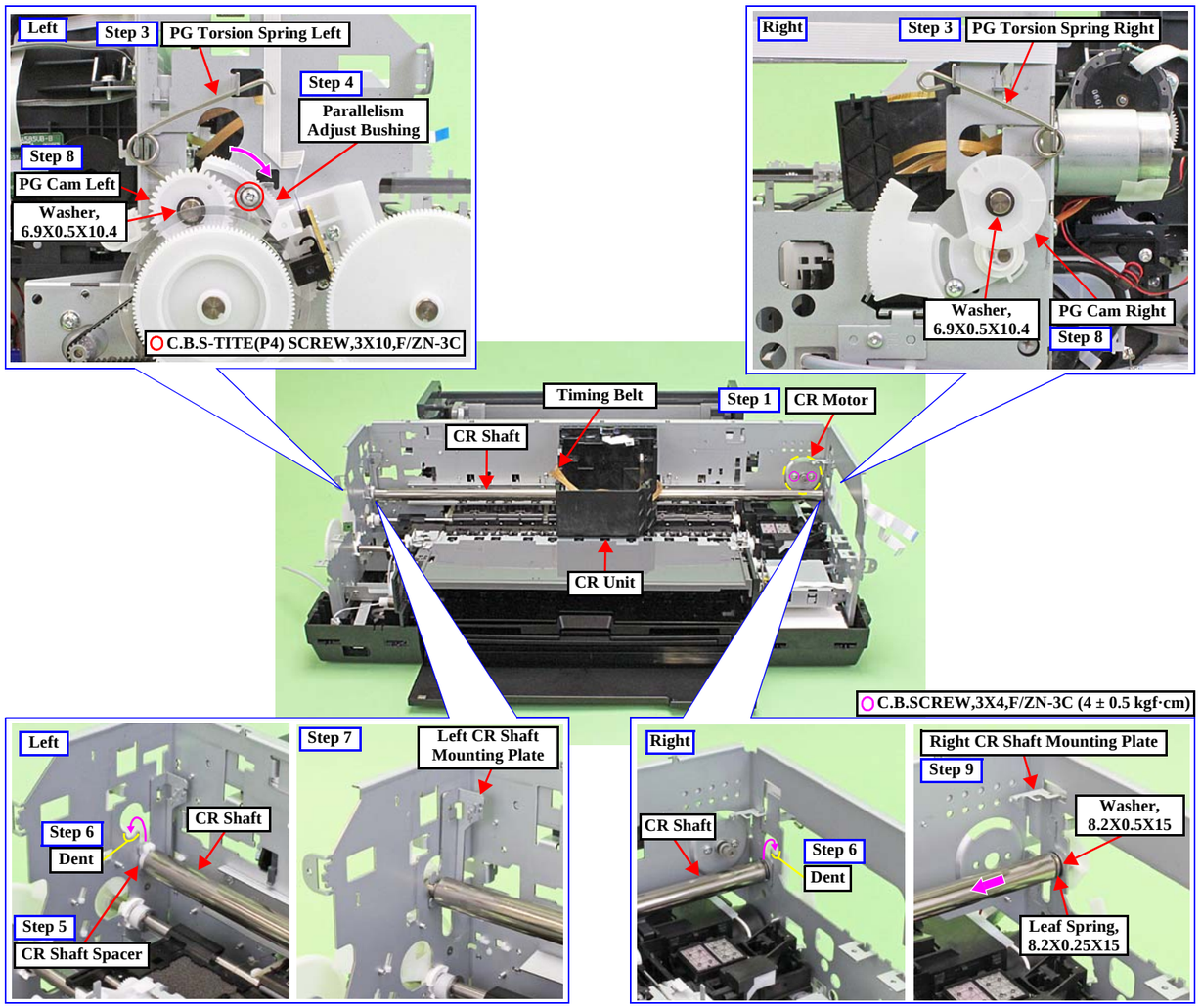
When installing the Release Flag Assy, install it with its gear section upward.

Middle Frame



Tighten the screws in the order indicated in the figure above.

CR Unit



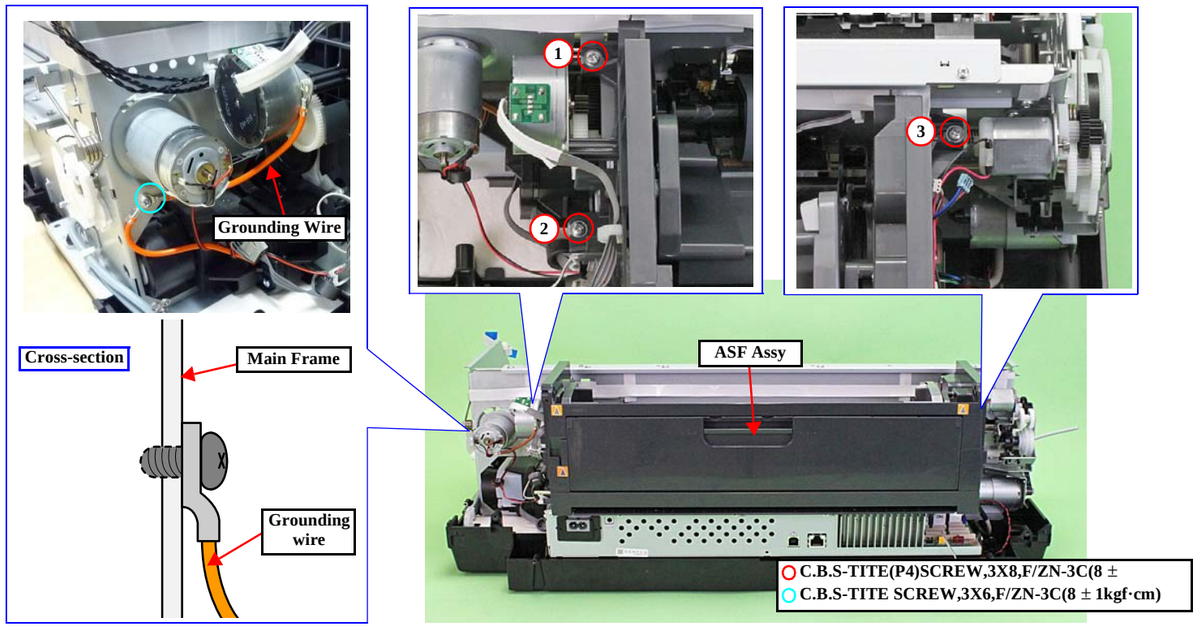
Be careful not to let the grease of the CR Shaft adhere to the Timing Belt of the CR Unit.

When removing the CR Unit, follow the procedure below.

1. Remove the screws (x2) that secure the CR Motor, and remove the CR Motor from the frame.
2. Mark the contact point on the Parallelism Adjust Bushing with the frame. (p 50)
3. Remove the PG Torsion Spring Left / Right.
4. Loosen the screw that secure the Parallelism Adjust Bushing, and turn the Parallelism Adjust Bushing in the direction of the arrow shown above.
5. Remove the CR Shaft Spacer.
6. Lift the CR Shaft, and move both ends of it to the dent of the frame.
7. Remove the Left CR Shaft Mounting Plate.
8. Remove the Washer, 6.9X0.5X10.4 (x1 each) that secure the PG Cam Left/Right, and remove the PG Cam Left/Right from the CR Shaft.
9. Slide the CR Shaft to the left to disengage it from the frame, and from the right end of the CR Shaft, remove the Right CR Shaft Mounting Plate, Washer, 8.2X0.5X15, and Leaf Spring, 8.2X0.25X15 in order.
10. Remove the left end of the CR Shaft from the frame, and remove it together with the CR Unit.
11. Remove the CR Shaft from the CR Unit.

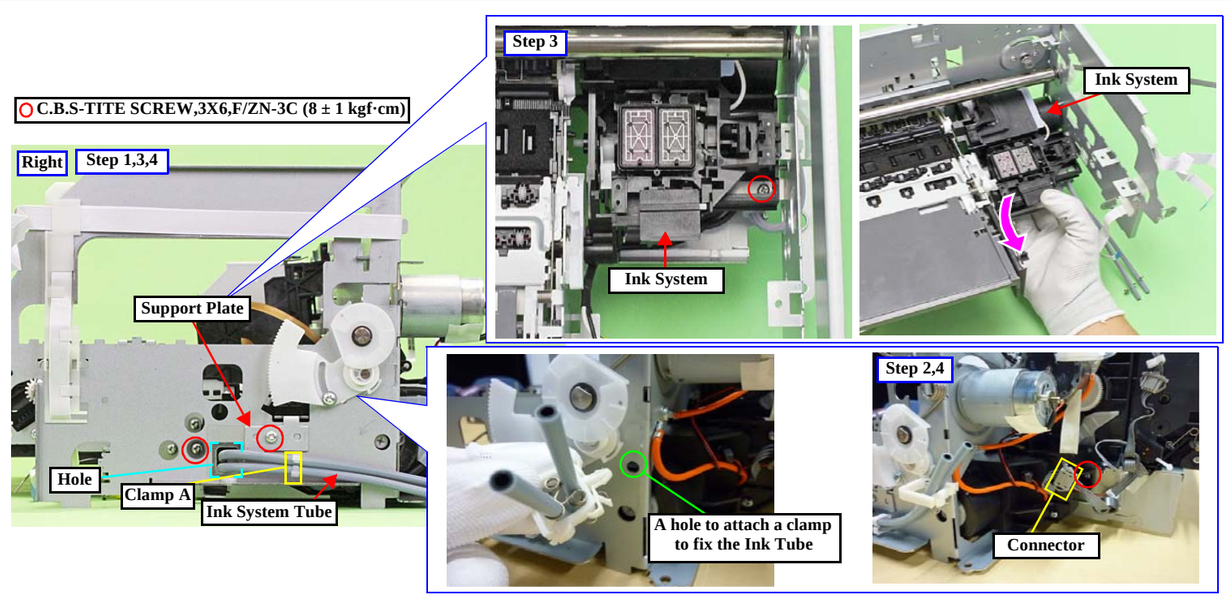
- When installing the CR Motor, install it by referring to " CR Motor (p23)".
- Be careful not to mistake the PG Torsion Spring Right and PG Torsion Spring Left when installing them because they look alike.
- Make sure to install the Parallelism Adjust Bushing correctly to the location with the marking drawn when removing it.

ASF Assy



- Tighten the screws in the order indicated in the figure above.
- Attach the terminal of the grounding wire in the direction shown in the “Cross-section” figure.

Ink System

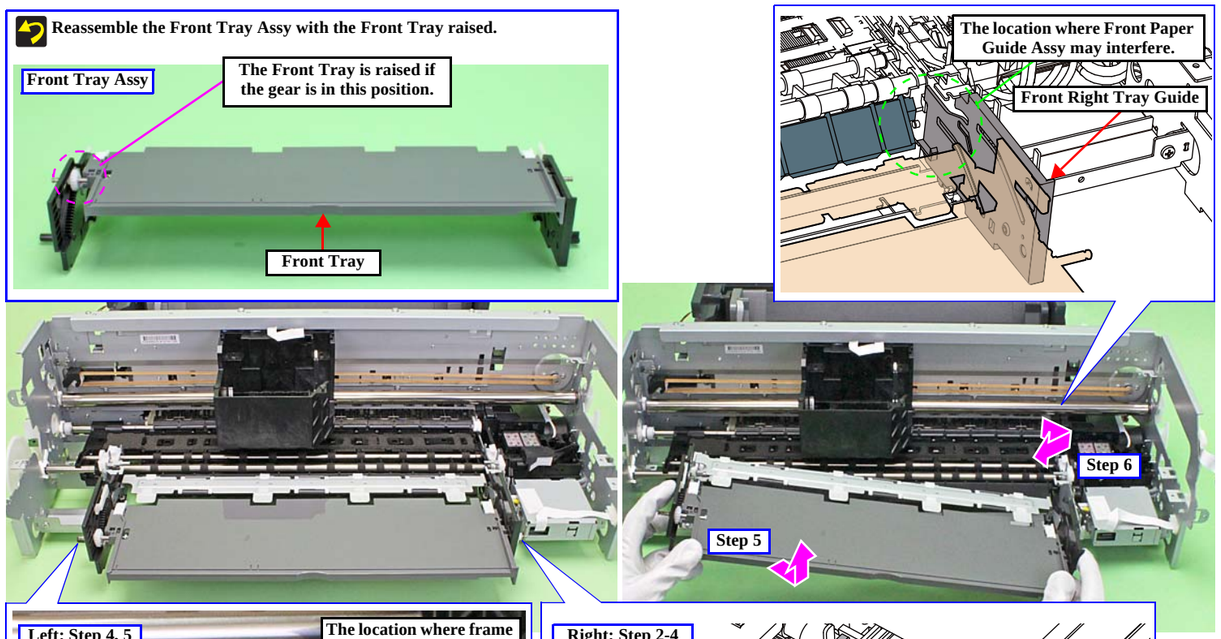


When removing the Ink System, follow the procedure below.

1. Release the Ink System Tube from the clamp A and pull out from the hole of the frame.
2. Release the Pump Motor Cable from the connector.
3. Remove the screws (x2) that secure the Support Plate, and remove the Support Plate.
4. Remove the screws (x2) that secure the Ink System, and remove it downward while avoiding the frame.

When securing the Ink System Tubes (x2) with the clamp A, make sure to arrange the shorter one to the bottom as shown.

Front Tray Assy



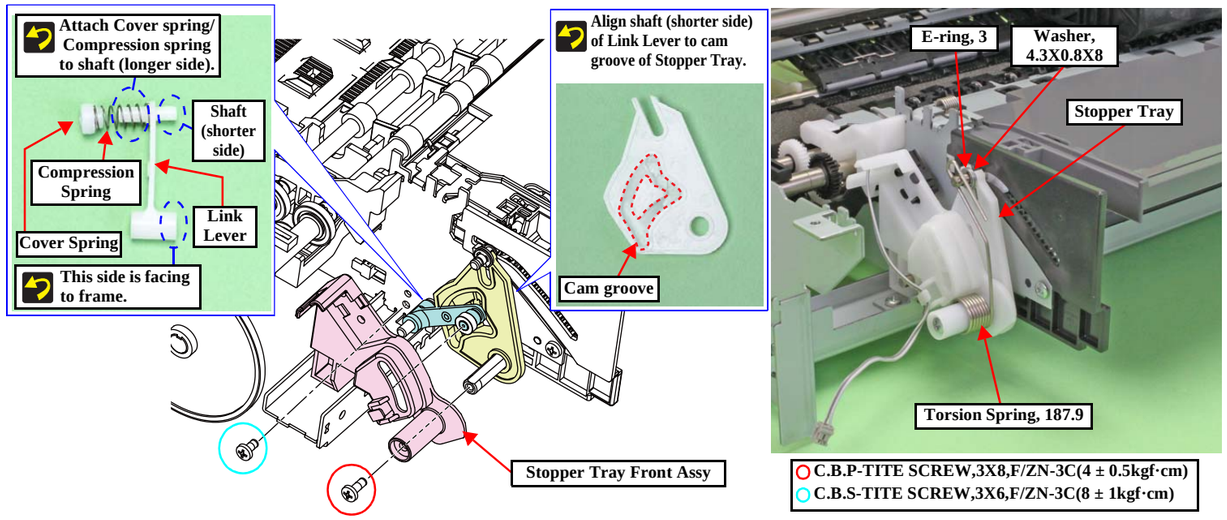
When disassembling/reassembling the Front Tray Assy, there are some locations where the frame and the Front Paper Guide Assy may interfere. Therefore, be careful not to deform the frame when working.

When removing the Front Tray Assy, follow the procedure below.

1. Remove the screw that secure the Mist Board Assy.
2. Remove the Torsion Spring, 187.9 on the right side of the Front Tray Assy.
3. Remove the E-ring, 3, and remove the Spur Gear, 14.4 and Parallel Pin, 1.5.
4. Remove the screws (x3) that secure the Front Tray Assy.
5. Release the hook and dowel of the Front Left Tray Guide from the frame and slide it to the front of the printer, and then lift the left side of the Front Tray Assy.
6. Release the hook and dowels (x2) of the Front Right Tray Guide from the frame and slide it to the front of the printer while avoiding the Front Paper Guide Assy, and then remove the Front Tray Assy by pulling out the Front Tray Shaft and Front Right Tray Guide from the hole of the frame.

- Reassemble the Front Tray Assy with the Front Tray raised. After reassembly, make sure the Front Tray Assy is secured with the hooks and dowels, and then secure it with the screws.
- After reassembling the Front Tray Assy, confirm the Torsion Spring, 187.9 is correctly attached.
- Before reassembling the Tray Support Assy/Front Tray, confirm the Washer,3.1X0.5X5.4 (x2) and Washer,26X0.5X4.7 (x2) are correctly attached.

Stopper Tray Unit

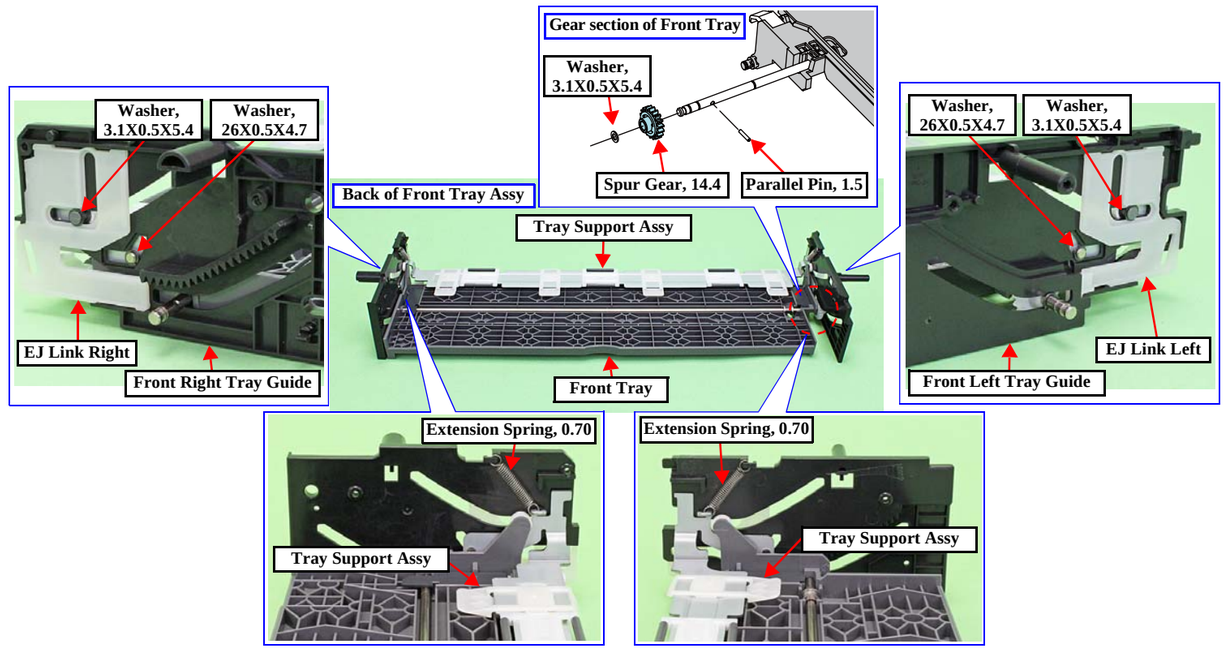


When removing the Stopper Tray Unit, follow the procedure below.

1. Remove the Torsion Spring, 187.9.
2. Remove the screws (x2) that secure the Stopper Tray Front Assy and remove the Stopper Tray Front Assy.
3. Remove the Lever Link with Cover Spring and Compression Spring.
4. Remove the E-ring, 3 and Washer, 4.3X0.8X8, and remove the Stopper Tray.

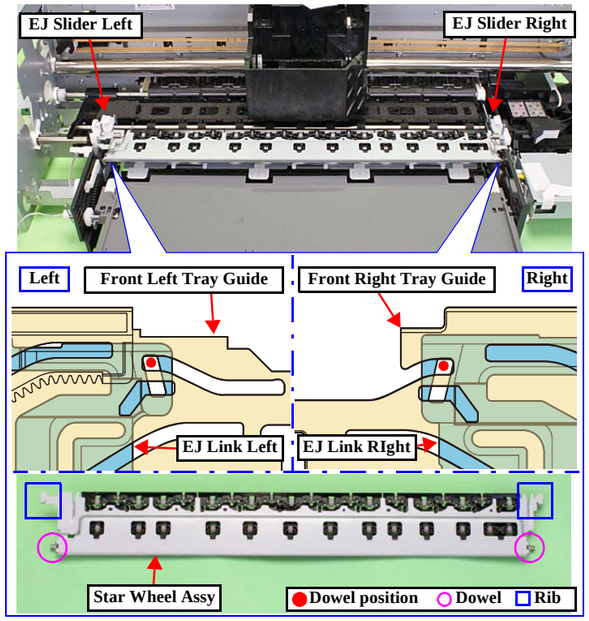
- When attaching the Cover Spring to the Link Lever, attach it as shown above.
- After reassembling the Stopper Tray Unit, confirm the Torsion Spring, 187.9 is correctly attached.

Tray Support Assy / Front Tray



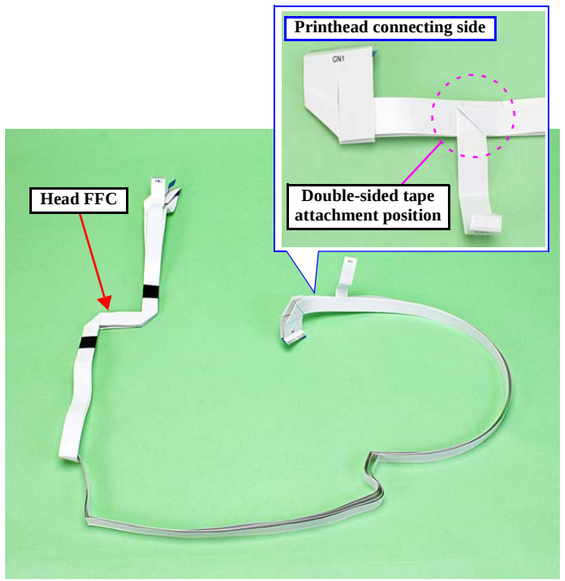
- When reassembling the Front Tray Assy, install each part as shown above, and secure them with their dedicated washer, parallel pin, and extension spring.
- Before reassembling the Tray Support Assy/Front Tray, confirm the Washer,3.1X0.5X5.4 (x2) and Washer,26X0.5X4.7 (x2) are correctly attached.

Star Wheel Assy



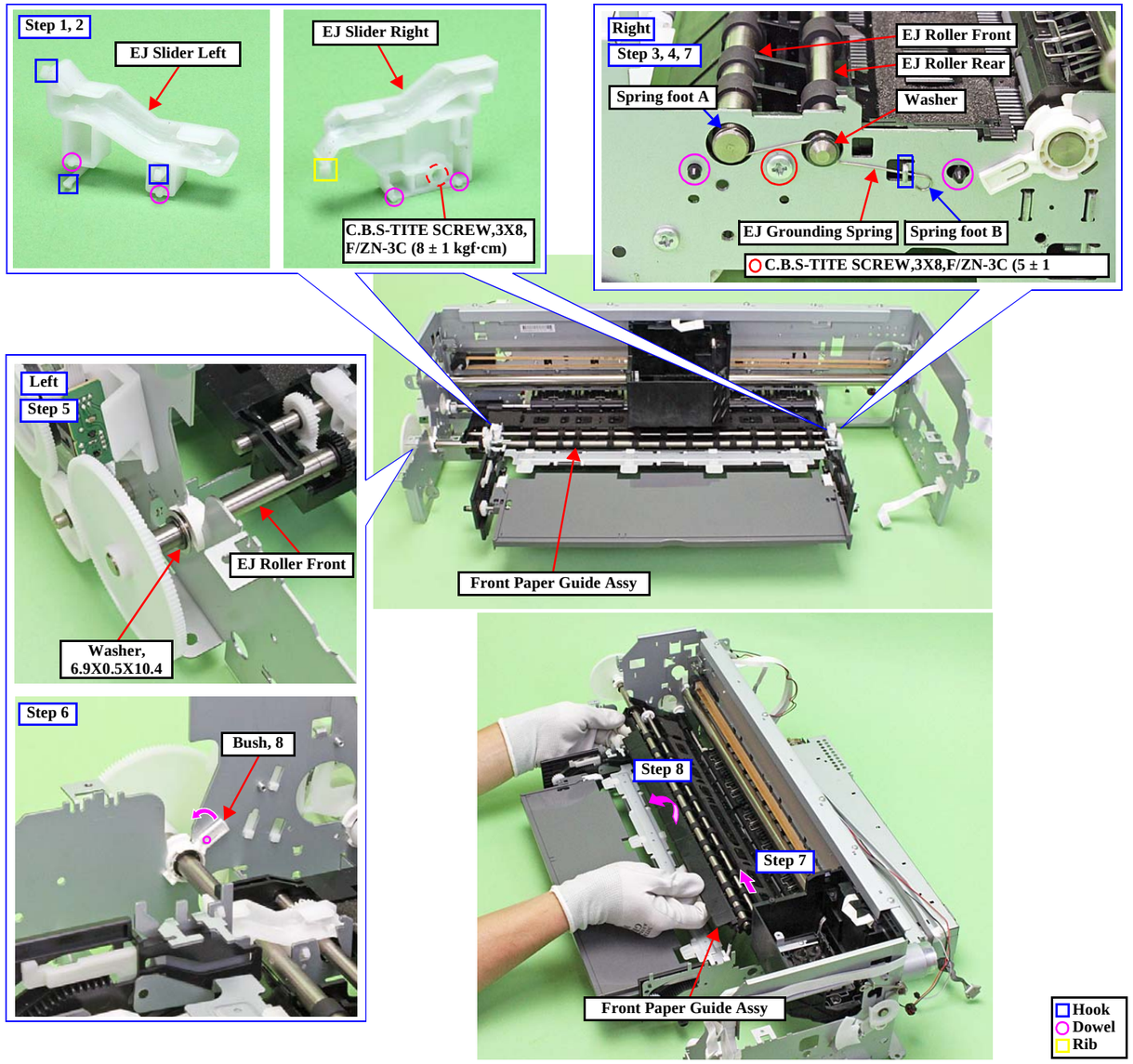
- Attach the dowels on the left/right of the Star Wheel Assy from the left one first into their attachment positions shown above.
- Insert the ribs on the left/right of the Star Wheel Assy to the grooves on the EJ Frame Slider Left/Right.

Head FFC



To prevent degradation of print quality due to interference of the Head FFC (x2) with the CR Unit movement, the Head FFC (x2) are folded with the jig and bundled together with double-sided tape. When handling the Head FFC, take care not to make an extra fold on it other than original ones. Furthermore, do not peel the FFC apart or change the attachment locations.

Front Paper Guide Assy



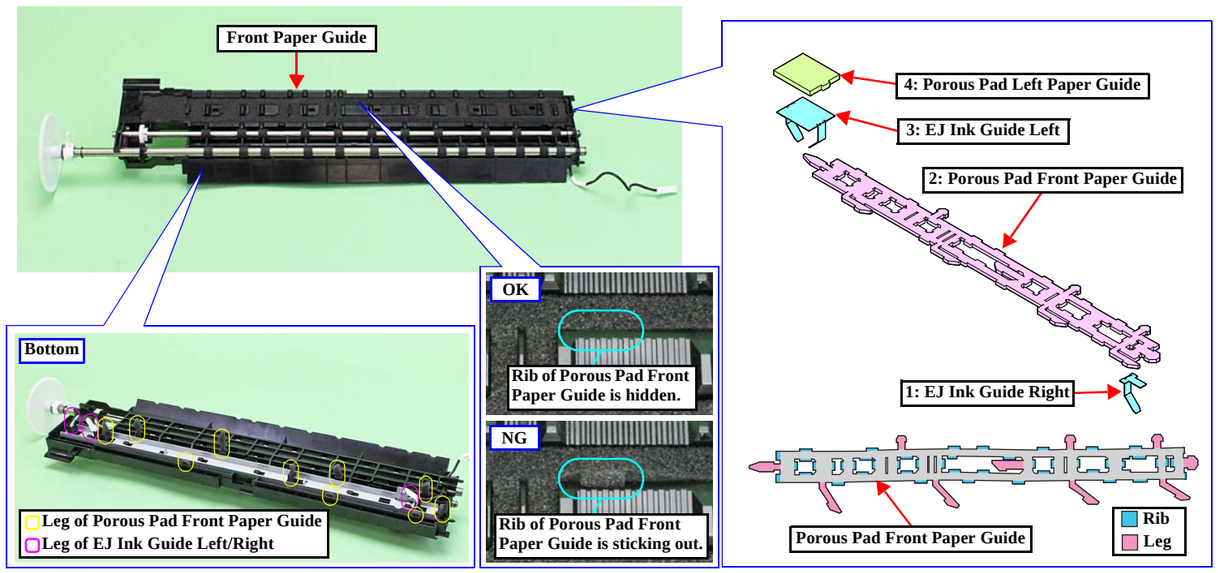
When removing the Front Paper Guide Assy, follow the procedure below.

1. Release the hooks (x3) and dowels (x2) of the EJ Slider Left, and remove the EJ Slider Left.
2. Remove the screw that secure the EJ Slider Right and release the dowels (x2) and rib, and then remove the EJ Slider Right.
3. Remove the EJ Grounding Spring on the right side of the Front Paper Guide Assy.
4. Remove the screw that secure the Front Paper Guide Assy.
5. Remove the Washer,6.9X0.5X10.4 from the EJ Roller Front.
6. Release the dowel of the Bush, 8 and rotate the Front Paper Guide Assy upward and align it with the cutout of the frame.
7. Slide the Front Paper Guide Assy to the left, and release the dowels (x2) on the right side of it from the frame.
8. Lift the front side of the Front Paper Guide Assy and detach the EJ Roller Front from the cutout of the frame, and then remove the Front Paper Guide Assy while avoiding the parts around it.

When installing the EJ Grounding Spring, follow the procedure below.

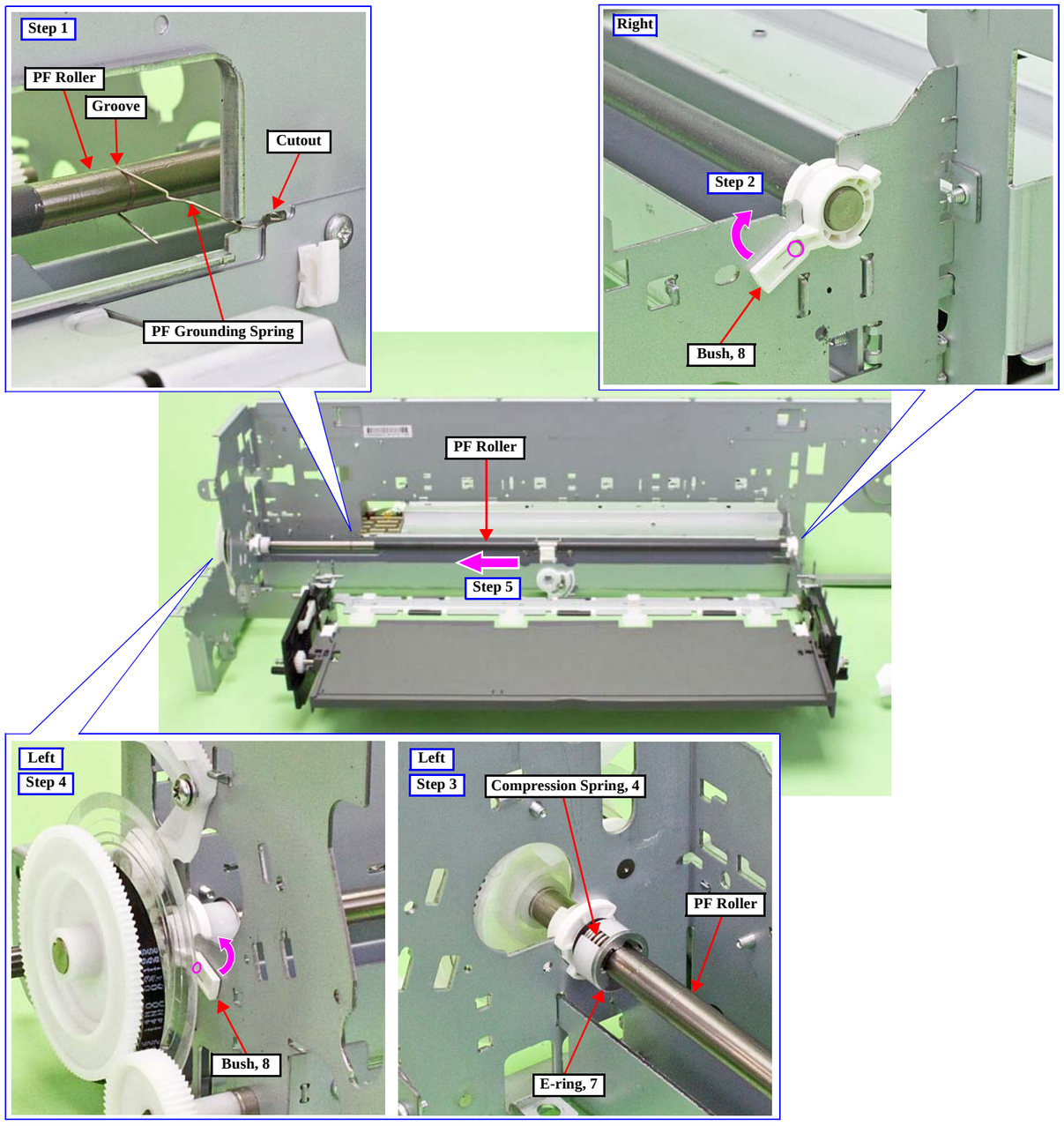
1. Engage the Spring Foot A to the groove of the EJ Roller Front.
2. Engage the bent section of the EJ Grounding Spring on the inner side of the washer outside the EJ Roller Rear.
3. Engage the Spring Foot B to the hook of the frame.

Porous Pad Front Paper Guide



- When installing the EJ Ink Guide Left/Right, Porous Pad Front Paper Guide and Porous Pad Left Paper Guide, install them in the order shown above.
- After installing the Porous Pad Front Paper Guide, make sure the legs (x10) of the Porous Pad Front Paper Guide and legs (x3) of the EJ Ink Guide Left/Right are fully pulled out and they drop down straight from the hole of the Front Paper Guide Assy.
- Make sure that all ribs (x47) of the Porous Pad Front Paper Guide are fitted into the grooves of the Front Paper Guide, and no pad lifts off from the platen.

PF Roller

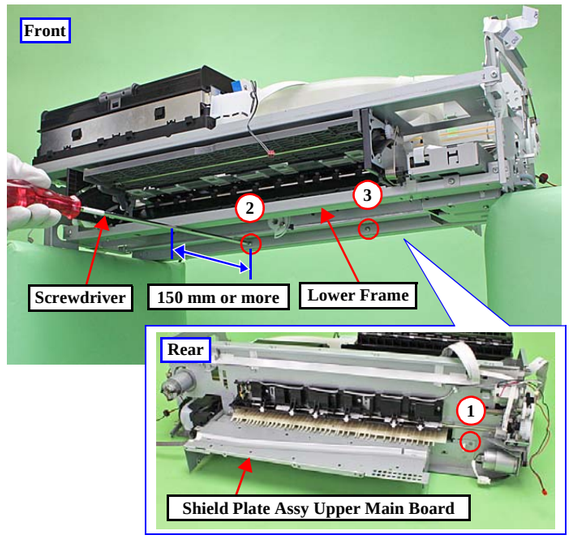


When removing the PF Roller, follow the procedure below.

1. Remove the PF Grounding Spring.
2. Release the dowel of the Bush, 8 on the right side of the PF Roller, and rotate it upward and align it with the cutout of the frame.
3. Remove the E-ring, 7 and slide the Compression Spring, 4 to the right.
4. Release the dowel of the Bush, 8 on the left side of the PF Roller, and rotate it upward and align it with the cutout of the frame.
5. Pull out the PF Roller to the left side from the hole of the frame and remove it from the frame.

When attaching the PF Grounding Spring, engage the longer bent leg to the groove of the PF Roller, and engage the other leg to the cutout of the frame to secure the spring.

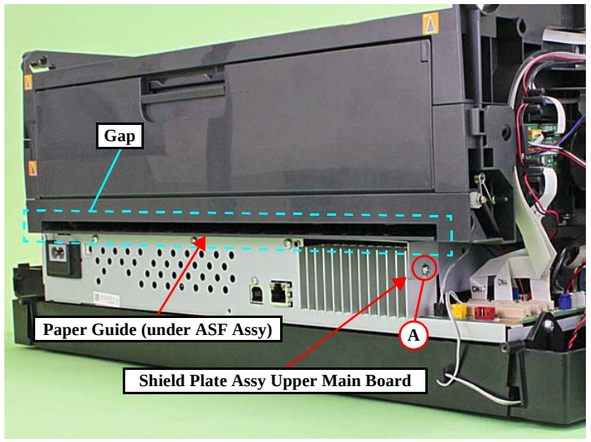
Sheild Plate Assy Upper Main Board



○ C.B.S-TITE SCREW,3X6,F/ZN-3C (8 ± 1 kgf·cm)

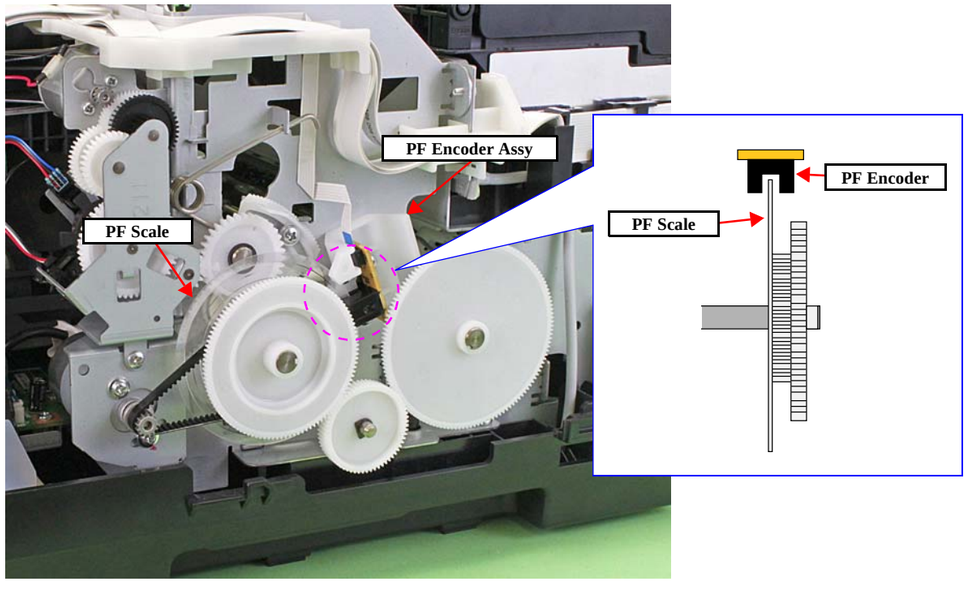
- When tightening the screw that secures the Shield Plate Assy Upper Main Board, use a screwdriver with the shaft length of 150 mm or more and tighten the screw straight. Otherwise, you have to screw it obliquely and can not tighten it correctly because the grip of the driver hits the lower frame.
- Tighten the screws in the order indicated in the figure above.

Board Assy



After installing the Board Assy, confirm the gap shown above is uniform. If not, the Shield Plate Assy Upper Main Board pushes up the Paper Guide (under ASF Assy). In such a case, loosen the screw (A) and adjust the Shield Plate Assy Upper Main Board position until the gap become even, then tighten the screw (A).

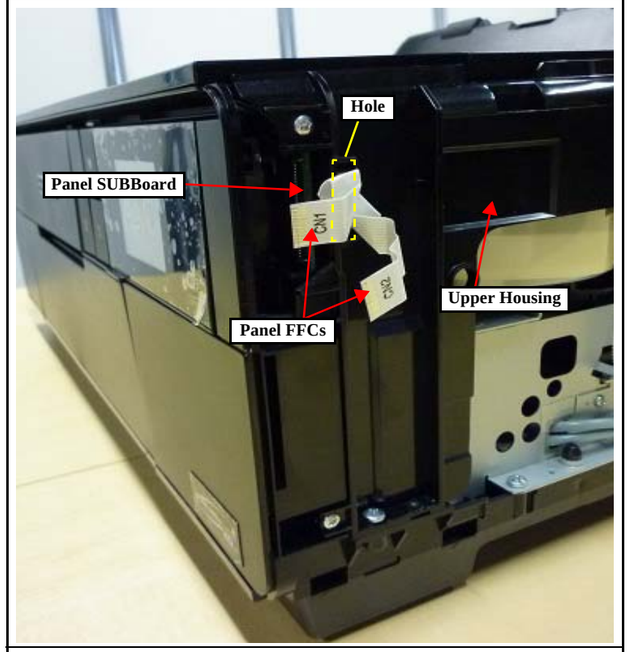
PF Scale / PF Encoder Assy



After installing the PF Encoder Assy, confirm the PF Encoder does not touch the PF Scale.

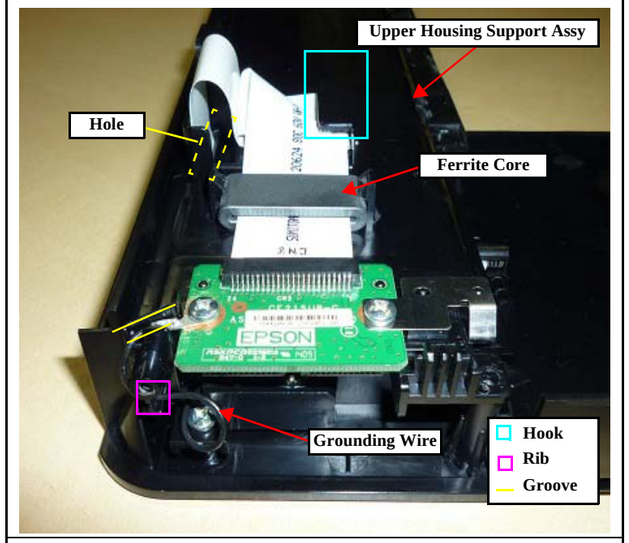
1.4 Routing FFCs/cables

Upper Housing Support Assy



Route the Panel FFCs though the hole of the Upper Housing, and connect it to the connector on the Panel SUB Board.

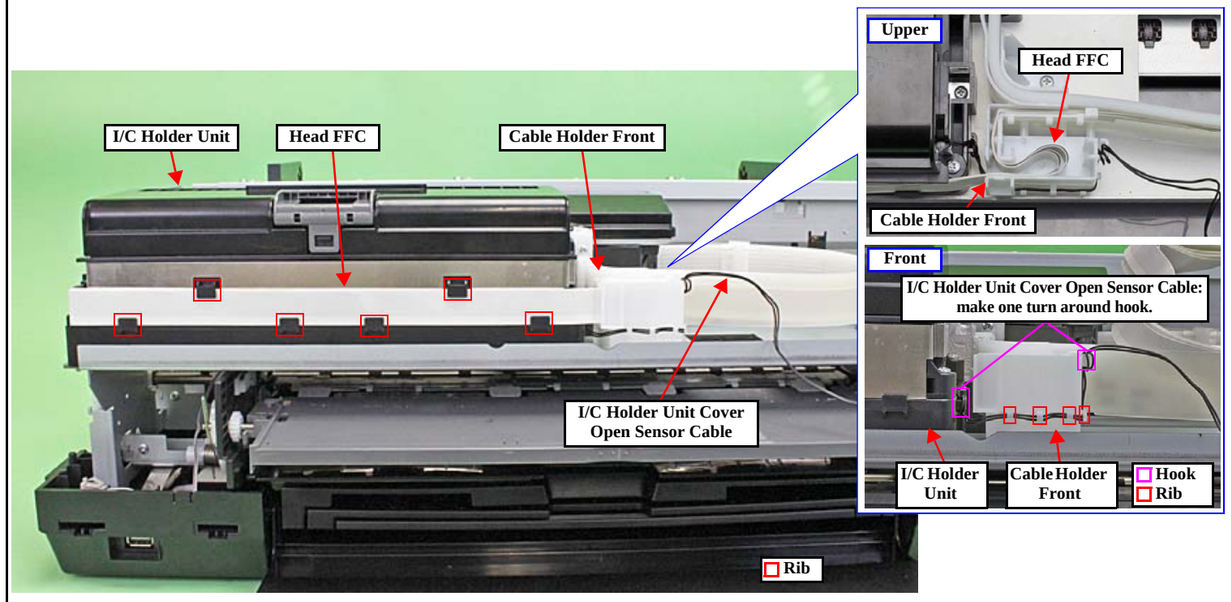
Panel Unit



When routing a cable of the Panel Unit, follow the procedure below.

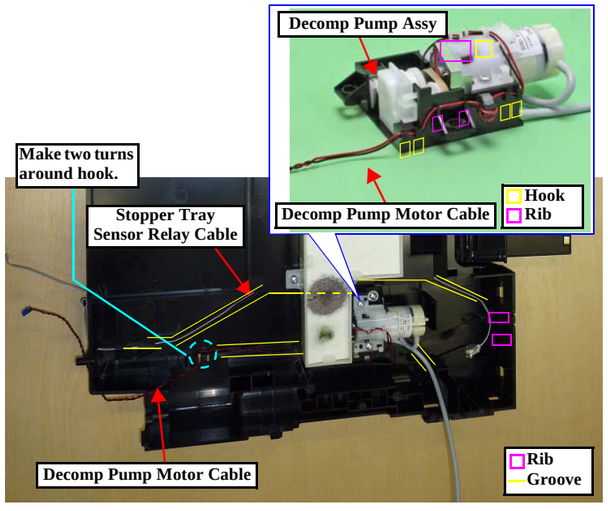
1. Route the Panel Unit FFC through the hole of the Upper Housing Support Assy, and through the ferrite core. Fix a fold part of the FFC by the hook.
2. Connect the Panel Unit FFC to the connector on the Panel SUB Board.
3. Fix the grounding wire on the Panel SUB Board with screws, and route the wire through the rib and groove as shown above.

Head FFC



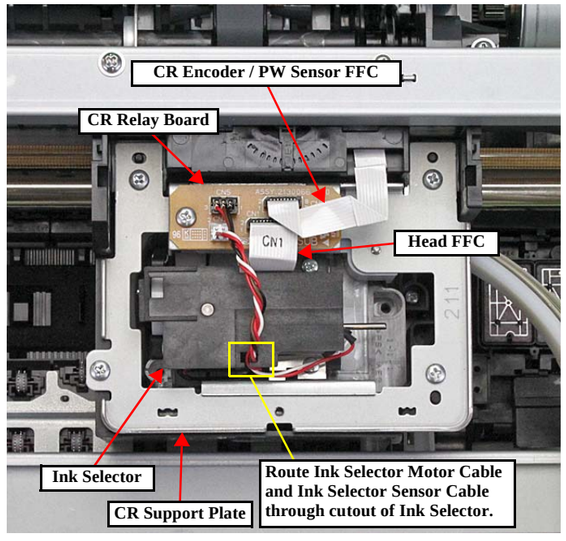
- Route the Head FFC through the I/C Holder Unit and Cable Holder Front as shown above.
- When routing the I/C Holder Unit Cover Open Sensor Cable, make one turn around the hook of the I/C Holder Unit and route through the ribs (x4) of the Cable Holder Front, and then make one turn around the hook of the Cable Holder Front.

Decomp Pump Assy



- When routing the Decomp Pump Motor Cable through the Decomp Pump Assy, route the cable through the following ribs and hooks.
  - Ribs (x3) and hook on the upper side of the Decomp Pump Assy
  - Hooks (x4) and ribs (x2) on the side of the Decomp Pump Assy
- Route the following cables through the ribs and grooves of the Lower Housing.
  - Decomp Pump Motor Cable
  - Stopper Tray Sensor Relay Cable

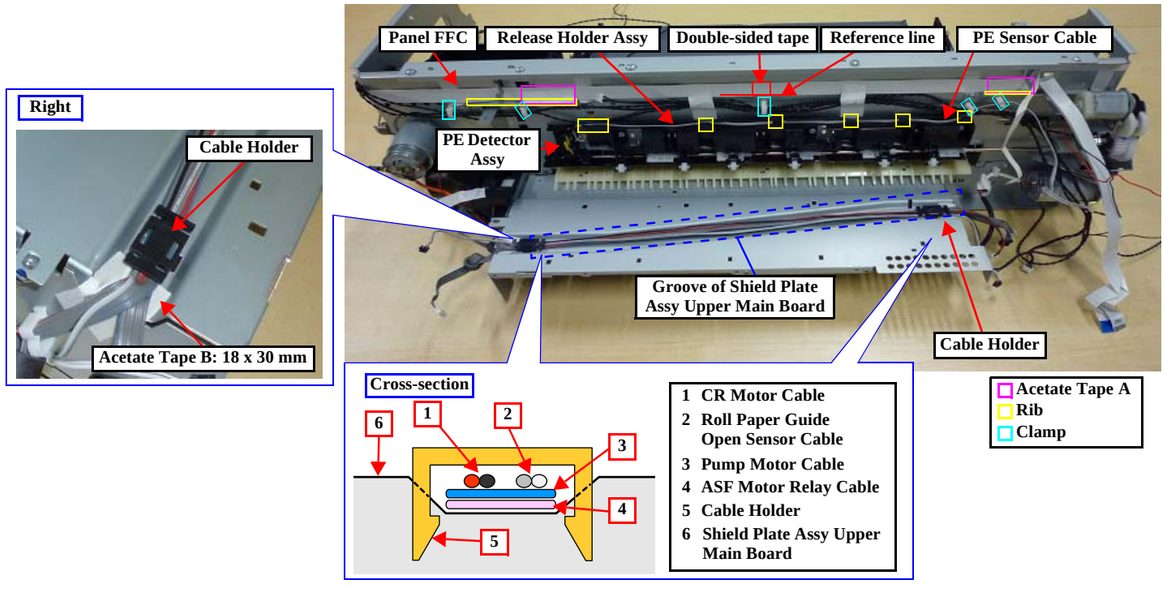
CR Support Plate / Ink Selector



Route the following cables/FFCs as shown above and connect them to the connectors on the CR Relay Board.

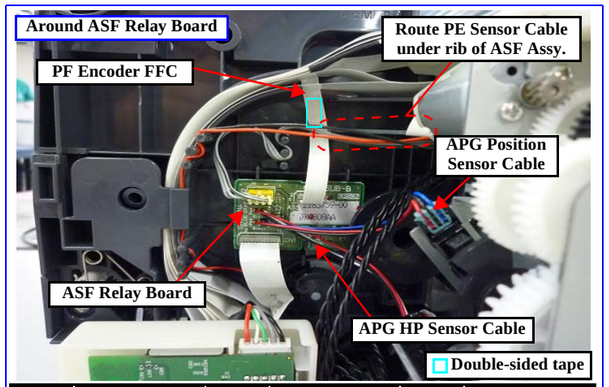
- Ink Selector Motor Cable (CN2)
- Ink Selector Sensor Cable (CN5)
- Head FFC (CN1)
- CR Encoder / PW Sensor FFC (CN6)

Upper side of the Board Assy

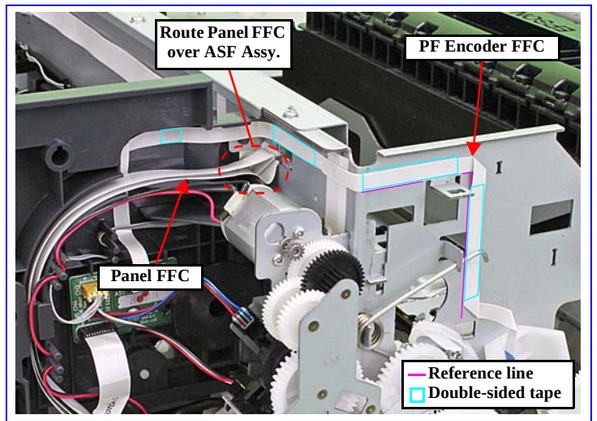


- Route the Panel FFC through the ribs (x2) along with the reference line as shown above, and secure it with double-sided tape and two pieces of acetate tape A.
- Route the PE Sensor Cable through the ribs (x6) of the Release Holder Assy, and secure it with the clamp.
- Attach acetate tape B (18 x 30 mm) on the position shown above.
- Route the cables through the groove on the Shield Plate Assy Upper Main Board arranging them in the order shown in “cross-section” above, and secure them with the Cable Holders (x2).

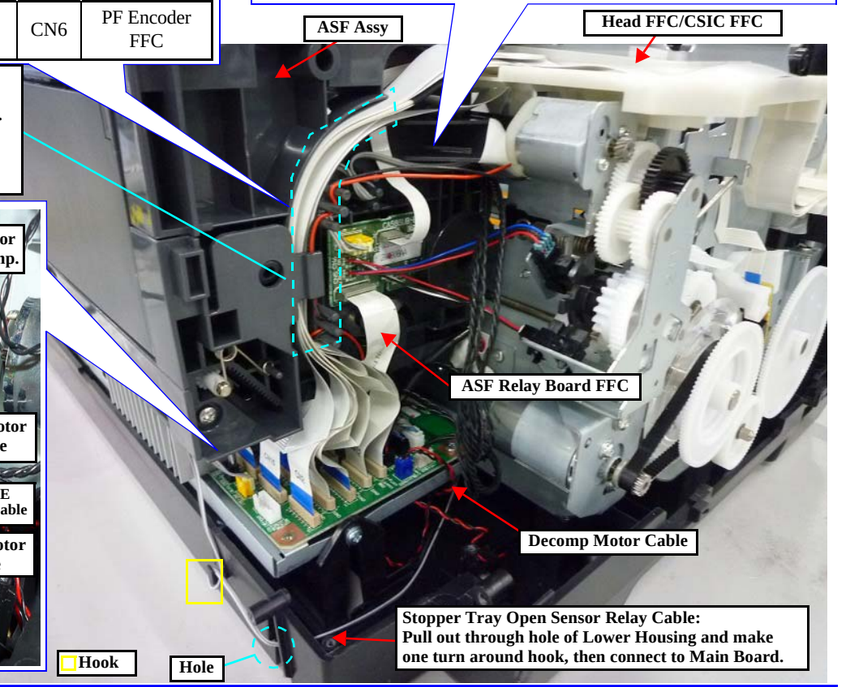
Rear left of printer (1)

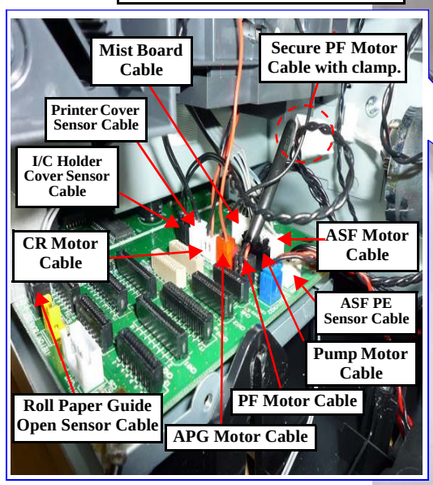


CN #	Name	CN #	Name	CN #	Name
CN1	ASF Relay Board FFC	CN2	PE Sensor Cable	CN6	PF Encoder FFC

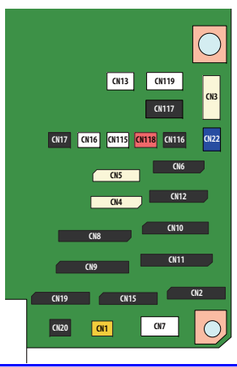


When routing the following FFCs, route them through groove of ASF Assy under Roll Paper Guide Assy.
- Head FFC
- CSIC FFC
- Panel FFC



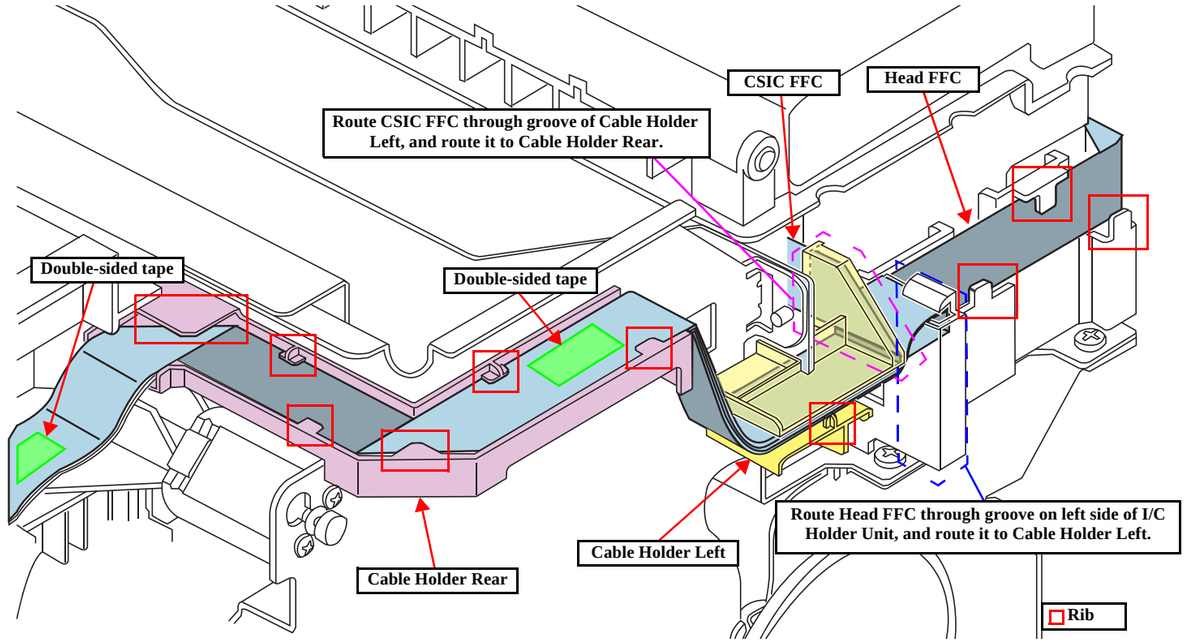


Refer below for the connector layout on the Main Board for the cables/FFCs. The connector numbers are marked on each FFC, therefore, make sure of it when connecting them.



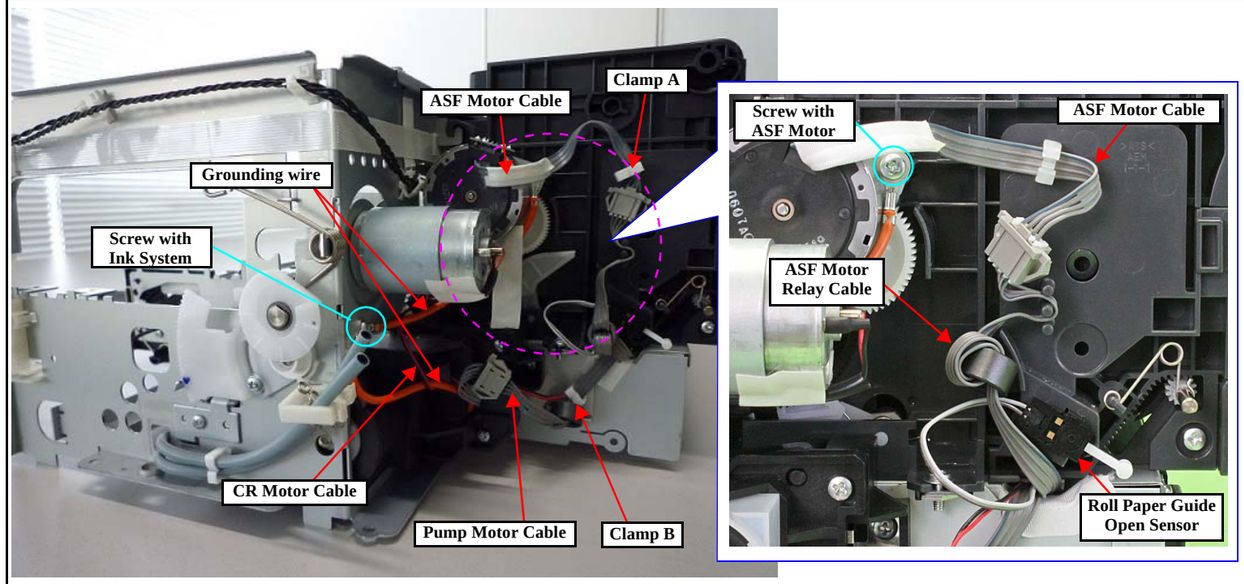
CN #	Name	CN #	Name	CN #	Name
CN1	Stopper Tray Open Sensor Relay Cable	CN9	Head FFC	CN19	CSIC FFC
		CN10	Head FFC	CN20	Roll Paper Guide Open Sensor Cable
CN2	CSIC FFC	CN11	Head FFC		
CN3	PictBridge Holder Cable	CN12	CR Relay Board FFC	CN22	Decomp Motor Cable
CN4	Panel FFC	CN13	Mist Board Cable	CN115	CR Motor Cable
CN5	Panel FFC	CN15	CSIC FFC	CN116	PF Motor Cable
CN6	ASF Relay Board FFC	CN16	Printer Cover Open Sensor Cable	CN117	Pump Motor Cable
CN7	Wireless LAN Module Cable	CN17	I/C Holder Unit Cover Open Sensor Cable	CN118	APG Motor Cable
CN8	Head FFC			CN119	ASF Motor Cable

Rear left of printer (2)



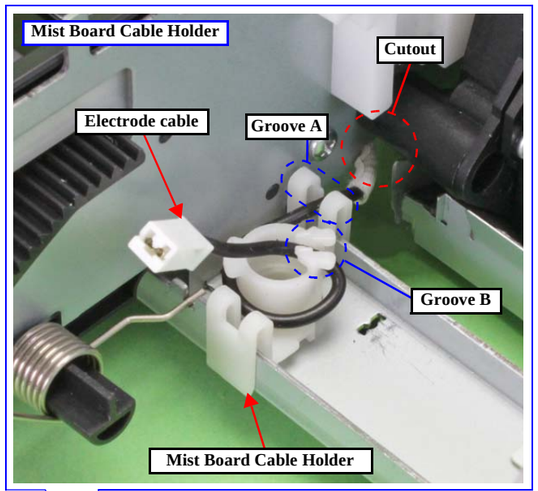
- Fold the Head FFC / CSIC FFC along the fold line, and route them through the ribs (x6) of the Cable Holder Rear, Cable Holder Left, and the ribs (x3) on the left side of the I/C Holder Unit.
- Route the CSIC FFC over the Head FFC and secure the CSIC FFC with double-sided tape at the points shown in the figure above.

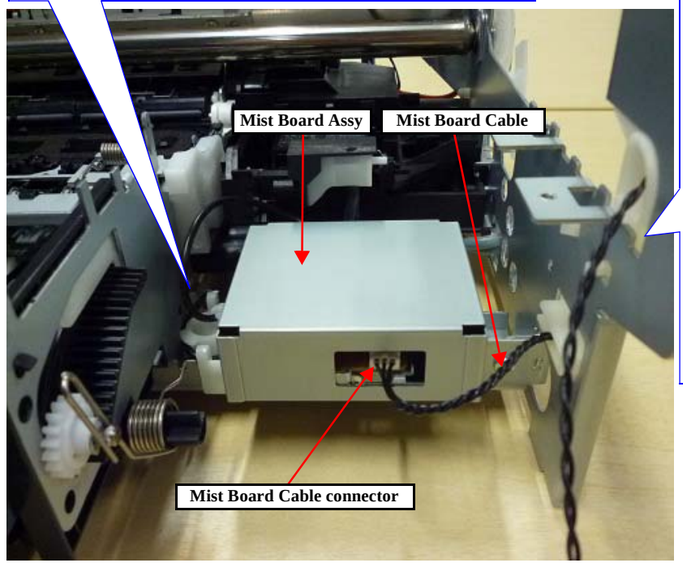
Rear right of printer

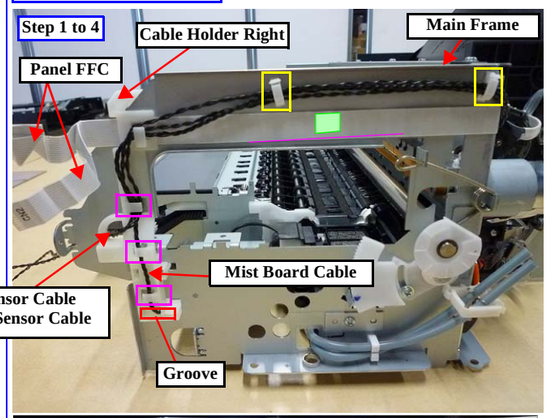


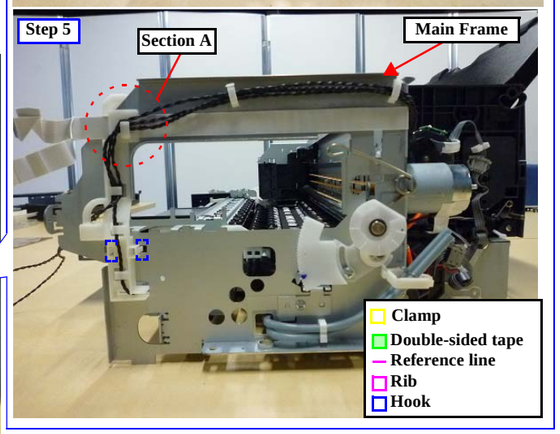
- Fix the grounding wires with screws in two places of the ASF Motor and the Ink System.
- Connect the ASF Motor Cable to the ASF Motor Relay Cable, and then secure it with the clamp A.
- Be careful not to let the ASF Motor Relay Cable interfere with the Roll Paper Guide Open Sensor when routing it.
- Connect the Pump Motor Cable to the Pump Motor Relay Cable, and then secure it with the clamp B.

Mist Board Assy / Right side of the Main Frame



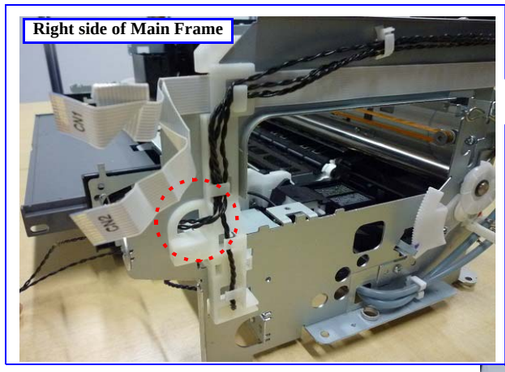


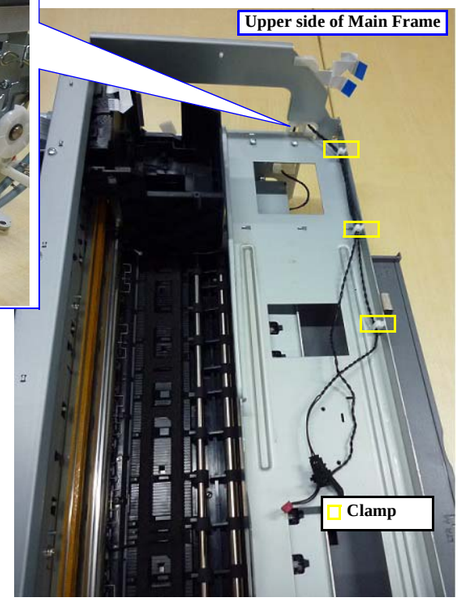




- When routing the FFCs/cables on the Mist Board Assy and the FFC on right side of the Main Frame, follow the procedure below.
  1. Before installing the Cable Holder Right to the Main Frame, route the Mist Board Cable through the groove and ribs (x3) of the Cable Holder Right.
  2. Route the Panel FFC along the reference line of the Main Frame, and secure it to the Main Frame with double-sided tape.
  3. Route the Mist Board Cable through the hole of the Main Frame.
  4. Secure the I/C Holder Unit Cover Open Sensor Cable and Printer Cover Open Sensor Cable with the clamps (x2) and ribs (x2), and then route these cables through the hole of the Main Frame.
  5. Engage the section A of the Cable Holder Right to the Main Frame as shown above, and then secure the Cable Holder Right to the Main Frame with the hooks (x2).
  6. Connect the Mist Board Cable to the Mist Board Cable connector.
- Pull out the electrode cable from the cutout of the Main Frame and route the cable through the groove A and B as shown above, and then connect it to the Mist Board.

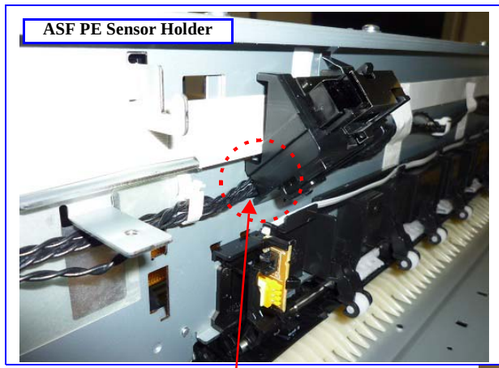
I/C Holder Unit Cover Open Sensor / Printer Cover Open Sensor

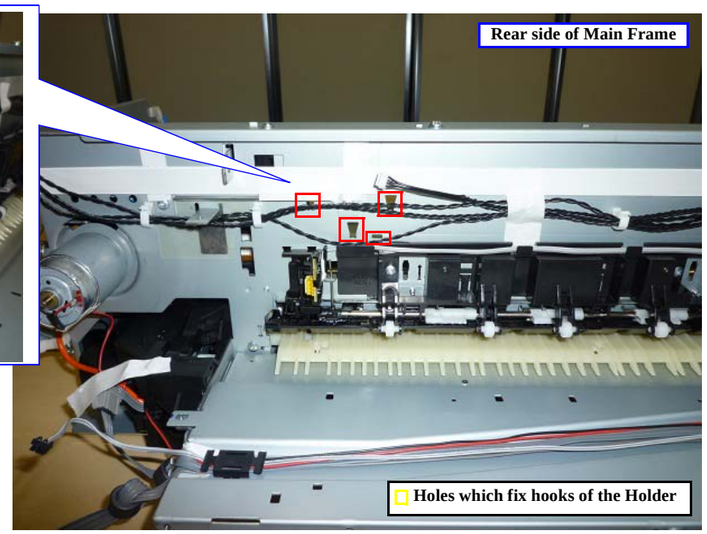




- Route the I/C Holder Unit Cover Open Sensor Cable and Printer Cover Open Sensor Cable through the hole of the Main Frame as shown above.
- Secure these two cables with clamps (x3) on the front part of the Main Frame.

ASF PE Sensor Holder





- Secure hooks (x4) of the ASF PE Sensor Holder to holes of the Main Frame as shown above.Route the I/C Holder Unit Cover Open Sensor Cable and Printer Cover Open Sensor Cable through the hole of the Main Frame as shown above.
- Route the following cables through a space between ASF PE Sensor Holder's hooks and the Main Frame.
  - I/C Holder Unit Cover Open Sensor Cable
  - Printer Cover Open Sensor Cable
  - Mist Board Cable

CHAPTER **2**

ADJUSTMENT

2.1 Adjustment Items and the Order by Repaired Part

The table from the following page lists the required adjustments depending upon the parts being repaired or replaced. Find the part(s) you removed or replaced, and check which adjustment(s) must be carried out.

- **If the EEPROM data cannot be read out from the old Main Board using the Adjustment Program when replacing the Main Board is required, the Waste Ink Pad and Lower Paper Guide Ink Pad Tray must be replaced with the Main Board at the same time.**
- **After all required adjustments are completed, use the "Final check pattern print" function to print all adjustment patterns for final check. If you find a problem with the printout patterns, carry out the adjustment again.**
- **When replacing the Main Board and the Printer Mechanism at the same time, the adjustment should be made after performing the initial setting.**

- **The table items and marks used in the "Required Adjustment List" provided on the following pages have the following meanings.**
  - **"O" indicates that the adjustment must be carried out.**
  - **"---" indicates that the adjustment is not required.**
  - **The "Mechanism Adjustment" should be performed just after reinstalling or reassembling the part or unit. (See " Table2-1 Adjustment items and the order by repaired part (Mechanism Adjustment) (p33)")**
  - **The "Adjustments using the Adjustment Program" need to be performed after reassembling the printer completely. (See " Table2-2 Adjustment items and the order by repaired part (Adjustment Program) (p34)")**
- **If you have removed or replaced multiple parts, make sure to check the required adjustments for the all parts. And when multiple adjustments must be carried out, be sure to carry out them in the order given in the "Priority" row.**

Table 2-1. Adjustment items and the order by repaired part (Mechanism Adjustment)

Adjustment Type			Mechanism adjustment			
Priority			1	2	3	4
Adjustment Item			PF Belt Tension Adjustment	PF Roller Shaft Center Support Position Adjustment	ASF Guide Roller LDs position adjustment	PG Adjustment
Purpose			To reduce the load on the PF motor and to ensure paper feed accuracy.	To compensate the deflection amount on the PF Roller Shaft and to maintain the appropriate paper feed amount.	To correct the position of the LD Roller in order to maintain the paper feed accuracy.	To secure the specified clearance between the print surface of the Printhead and paper, and adjust the parallelism of the 0-digit and 130-digit sides in order to maintain the print quality.
Part Name	Printer Mechanism	Replace	O	O	O	O
	PF Motor	Remove	O	---	---	---
		Replace	O	---	---	---
	Printhead	Remove	---	---	---	O
		Replace	---	---	---	O
	CR Unit	Remove	---	---	---	O
		Replace	---	---	---	O
	LD Roller Guide	Remove	---	---	O*1	---
		Replace	---	---	O	---
	Front Paper Guide Assy	Remove	---	---	---	O
		Replace	---	---	---	O
	PF Roller	Remove	O	O	---	---
		Replace	O	O	---	---
How to judge			See " 2.3.1 PF Timing Belt Tension Adjustment (p39)" for the details.	See " 2.3.2 PF Roller Shaft Center Support Position Adjustment (p40)" for the details.	See " 2.3.3 ASF Guide Roller LDs position adjustment (p46)" for the details.	See " 2.3.4 PG Adjustment (p49)" for the details.
Adjustment program			---	---	---	---
Tool			(See p 39)	(See p 40)	(See p 46)	(See p 49)

Note 1: The adjustment is not necessary for the parts other than mentioned.

2: Make sure to perform the adjustment using the Adjustment Program after mechanism adjustment is complete. (See " Table2-2 Adjustment items and the order by repaired part (Adjustment Program) (p34)" for the details.)

Note "*1": The adjustment is not necessary if you mark the installing positions of the LD Roller Guides before removing them, and align the markings when installing the LD Roller Guides.

Table 2-2. Adjustment items and the order by repaired part (Adjustment Program)

Adjustment Type			Adjustment using the Adjustment Program																						
Priority			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Adjustment Item			EEPROM Data Copy	Initialize Setting	Head ID Input	MAC address Input	Waste Ink Pad Counter	Ink charge	Release of Driven roller check	Front Tray print counter	PF deterioration offset	APG Function Check	Ink Selector Check	CR Belt check	Mist Recovery check	CR encode check	PF encode check	Head angular adjustment CR/PF	First Dot adjustment	PW adjustment	Bi-D adjustment	PF / EJ adjustment	CR motor heat protection control	PF motor heat protection control	Colori-metric calibration	Final check pattern print
Part Name	Waste Ink Pad	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Lower Paper Guide Ink Pad Tray	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Printer Mechanism	Replace	---	---	---	---	O	---	O	O Reset to 0	O Reset to 0	O	---	O	O	O	O	O	O	O	O	O	O	O	---	O
	APG Assy	Remove	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	APG Motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Board Assy*1 (Main Board/ Power Supply Board)	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace (Read OK)	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace (Read NG)	---	O	O	O	---	---	---	O Input max. value	O Input max. value	---	---	---	---	---	---	O	O	O	O	O	O	O	O	O
	Power Supply Board	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	O	O	O
	PF Motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	O
	Ink Supply Unit	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	O	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	O
	Printhead	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	O	O	O	O	---	---	---	O
		Replace	---	---	O	---	---	O	---	---	---	---	---	---	---	---	---	O	O	O	O	O	---	---	O	O
	CR Unit	Remove	---	---	---	---	---	---	---	---	---	---	---	O	---	O	---	O	O	O	O	O	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	O	---	O	---	O	O	O	O	O	---	---	---	O
	PF Frame	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O
	Rear Paper Guide	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O
	ASF Assy	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	O
	Release Holder Assy	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Release Flag Assy	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Upper Paper Guide Assy	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	CR Motor	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	O
How to judge			---	---	---	(p 54)	---	---	---	---	---	(p 69)	---	---	(p 53)	---	---	(p 55)	(p 36)	(p 36)	(p 36)	(p 36)	---	---	(p 57)	---
Adjustment program			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	---	O
Tool			---	---	---	---	---	---	---	---	---	---	---	---	(p 53)	---	---	---	Ruler	Ruler	---	---	---	---	(p 57)	---

Note "*1": Only removing/replacing the Main Board is included.
"*2": The value about twice of upper limit may enter.To reset the waste ink counter after replacing the Waste Ink Pad

Table 2-2. Adjustment items and the order by repaired part (Adjustment Program)

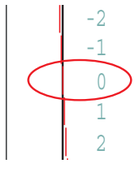
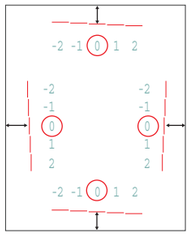
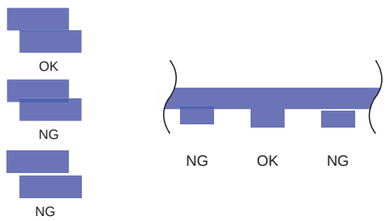
Adjustment Type			Adjustment using the Adjustment Program																					
Priority			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Adjustment Item			EEPROM Data Copy	Initialize Setting	Head ID Input	MAC address Input	Waste Ink Pad Counter	Ink charge	Release of Driven roller check	Front Tray print counter	PF deterioration offset	APG Function Check	Ink Selector Check	CR Belt check	Mist Recovery check	CR encode check	PF encode check	Head angular adjustment CR/PF	First Dot adjustment	PW adjustment	Bi-D adjustment	PF / EJ adjustment	CR motor heat protection control	PF motor heat protection control	Colori-metric calibration	Final check pattern print
Part Name	Stopper Tray Unit	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Tray Detector	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Front Tray Assy	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Tray Support Assy	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Front Tray	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O
	Star Wheel Assy	Remove	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	O	---	O	---	---	---	O
		Replace	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	O	---	O	---	---	---	O
	Front Paper Guide Assy	Remove	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O	O	O	O	---	---	---	O
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O	O	O	O	---	---	---	O
	PF Roller	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O
		Replace	---	---	---	---	---	---	---	O Reset to 0	O Reset to 0	---	---	---	---	---	---	---	---	---	---	O	---	---	---	O
	Mist Board Assy	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---	---
	CR Scale	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---	---
	CR Belt / CR encoder	Remove	---	---	---	---	---	---	---	---	---	---	---	O	---	O	---	---	---	---	---	---	---	---	---	---
		Replace	---	---	---	---	---	---	---	---	---	---	---	O	---	O	---	---	---	---	---	---	---	---	---	---
	PF Scale / PF encoder Assy	Remove	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---
		Replace	---	---	---	---	---	---	---	---	---	---	---	---	---	---	O	---	---	---	---	---	---	---	---	---
How to judge			---	---	---	(p 54)	---	---	---	---	---	---	(p 69)	---	(p 53)	---	---	(p 55)	(p 36)	(p 36)	(p 36)	(p 36)	---	---	(p 57)	---
Adjustment program			O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	---	O
Tool			---	---	---	---	---	---	---	---	---	---	---	---	(p 53)	---	---	---	Ruler	Ruler	---	---	---	---	(p 57)	---

Note "*1": Only removing/replacing the Main Board is included.
"*2": The value about twice of upper limit may enter.To reset the waste ink counter after replacing the Waste Ink Pad

2.2 Adjustment Items

The following table describes the general outline of the adjustment.

Table 2-3. Adjustment Items

Class	Adjustment Items	Purpose	Printout pattern	Hoe to judge	Service Program	Tool
Paper Feed related	PF Belt Tension Adjustment	To reduce the load on the PF motor and to ensure paper feed accuracy.	---	See " 2.3.1 PF Timing Belt Tension Adjustment (p39)" for the details.	---	■ Sonic tension gauge ■ Plastic tweezers
	PF Roller Shaft Center Support Position Adjustment	To compensate the deflection amount on the PF Roller Shaft and to maintain the appropriate paper feed amount.	---	See " 2.3.2 PF Roller Shaft Center Support Position Adjustment (p40)" for the details.	---	■ PF Roller Adjustment Jig ■ PF Roller Adjustment Jig Stand ■ Level Block (When there isn't PF Roller Adjustment Jig Stand)
	ASF Guide Roller LDs position adjustment	To correct the position of the LD Roller in order to maintain the paper feed accuracy.	---	See " 2.3.3 ASF Guide Roller LDs position adjustment (p46)" for the details.	---	Penlight
	Release of Driven roller check	To check the release operation of driven rollers.	---	---	O	---
	Front Tray print counter	To initialize the Front Tray print counter according to the replaced parts.	---	---	O	---
	PF deterioration offset	To initialize the PF deterioration offset counter according to the replaced parts.	---	---	O	---
	First Dot adjustment	To correct the print start position in the carriage moving direction through software control.		Examine the lines on the left side of paper, and enter the number beside the line that overlaps with the horizontal line.	O	Ruler
	PW adjustment			Examine the misaligned lines printed on top, bottom, left, and right of the paper, and enter the number beside the line that is exactly 5 mm away from the paper edge for each side.	O	Ruler
	PF / EJ adjustment	To correct variations in paper feed accuracy to achieve higher print quality.		Examine the printout patterns and enter the value for the pattern with no overlap and gap between the two rectangles.	O	---
	PF motor heat protection control	To measure and correct the electrical variation of the motor and the power supply board.	---	---	O	---
	PF encoder check	To check the PF Scale for any abnormality such as damage or dirt and check if the scale can be properly read by the encoder.	---	---	O	---

Note "*1": The value about twice of upper limit may enter.To reset the waste ink counter after replacing the Waste Ink Pad.

Table 2-3. Adjustment Items

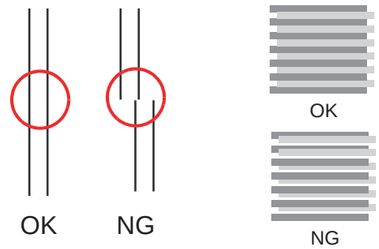
Class	Adjustment Items	Purpose	Printout pattern	Hoe to judge	Service Program	Tool
Print Head / CR related	PG Adjustment	To secure the specified clearance between the print surface of the Printhead and paper, and adjust the parallelism of the 0-digit and 130-digit sides in order to maintain the print quality.	---	See " 2.3.4 PG Adjustment (p49)" for the details.	---	Adjustment gauge
	Head ID Input	To correct characteristic variation of the replaced Printhead by entering its Printhead ID (Head ID).	---	---	O	---
	Head angular adjustment CR / PF	To correct the head angular (in CR/PF direction) when installing the Printhead.		See " 2.3.7 Head Angular Adjustment CR/PF (p55)" for the details.	O	---
	Bi-D adjustment	To correct print start timing in bidirectional printing through software control.		Examine the printout patterns, and enter the value for the pattern with no gap and overlap.	O	---
	CR motor heat protection control	To measure and correct the electrical variation of the motor and the power supply board.	---	---	O	---
	Colorimetric calibration	To register the Color ID to ensure consistent color quality.	---	See " 2.3.8 Colorimetric Calibration (p57)" for the details.	---	See " 2.3.8 Colorimetric Calibration (p57)" for the details.
	APG Function check	To rotates the APG motor to change the PG, and see if the PG is correctly set to its home position.	---	---	O	---
	CR Belt check	To move the CR Unit, and check if the movement is correctly.	---	---	O	---
	CR encoder check	To check the CR Scale for any abnormality such as damage or dirt and check if the scale can be properly read by the encoder	---	---	O	---
Ink Supply related	Mist Recovery check	To confirm the voltage applied to the plate under the Front Paper Guide Assy is proper for ink mist recovery inside the printer.	---	See " 2.3.5 Mist Recovery check (p53)" for the details.	O	---
	Waste Ink Pad Counter	To reset the waste ink counter after replacing the Waste Ink Pad.*1	---	---	O	---
	Ink charge	To fill ink inside the new Printhead to make it ready for print after replacing the Printhead.*2	---	---	O	---
	Ink Selector Check	To check the operation of the ink selector correctly.		See " 2.3.9 Ink Selector Check (p69)" for the details.	O	---
Boards related	EEPROM Data Copy	To copy adjustment values or the like stored on the old Main Board to the new board when the Main Board needs to be replaced.	---	---	O	---
	Initialize Setting	To write sales-destination-specific settings and the serial number into the Main Board after replacing it.	---	---	O	---
	MAC address Input	To input the MAC address if the data in EEPROM cannot be read out.	---	See " 2.3.6 Initial setting (p54)" for the details.	O	---

Table 2-3. Adjustment Items

Class	Adjustment Items	Purpose	Printout pattern	Hoe to judge	Service Program	Tool
Others	Final check pattern print	To check if all the adjustments have been properly made.	---	---	O	---

Note "*1": The value about twice of upper limit may enter.To reset the waste ink counter after replacing the Waste Ink Pad.

Note "*2": When completing Ink charge, Timer Cleaning Counter will be cleared.

2.3 Details of Adjustments

This section provides adjustment procedures for which explanation in details is necessary. See "2.1 Adjustment Items and the Order by Repaired Part (p32)" for the adjustments not explained here.

2.3.1 PF Timing Belt Tension Adjustment

This section describes PF Timing Belt tension adjustment.

☐ Tools

- Sonic tension gauge
- Plastic tweezers

☐ Adjustment procedure

When performing the PF Timing Belt tension measurement, make sure of the following.

- **Bring the microphone of the sonic tension gauge within 5 mm from the Timing Belt but do not let it touch the belt.**
- **Flip the Timing Belt as weak as the sonic tension gauge can measure it.**
- **Be careful not to damage the Timing belt when flipping it with the plastic tweezers.**

1. Set the following parameters to the sonic tension gauge.
   - Weight: 001.2 g/m
   - Width: 005.0 mm
   - Span: 0048 mm
2. Bring the microphone of the sonic tension gauge close to the upper center of the PF Timing Belt.
3. Press the “MEASURE” button on the sonic tension gauge and flip the timing belt with plastic tweezers.

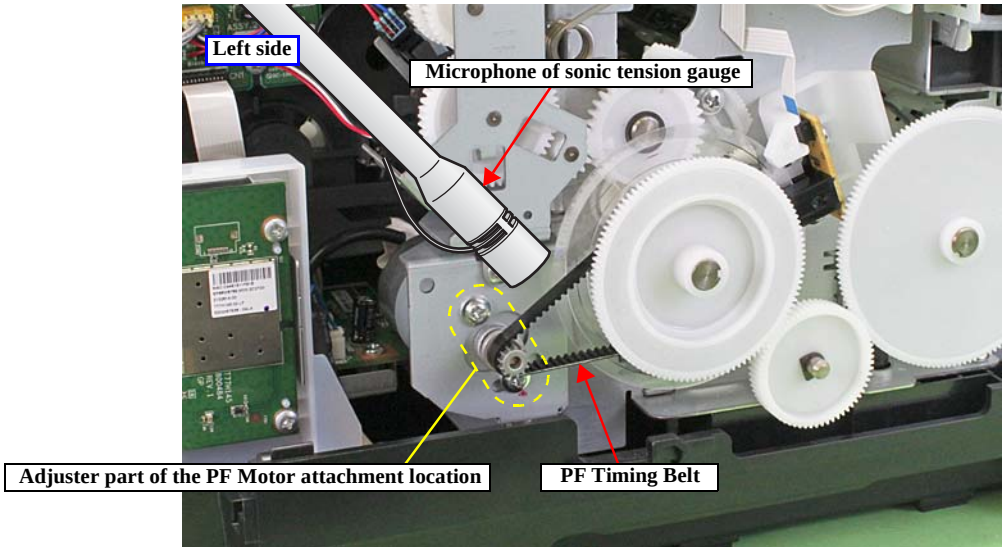


Figure 2-1. Microphone Position

The standard tension range of the PF Timing Belt Tension Adjustment is as follows:

- **Standard value: 10.5 - 12.5N**

4. The adjustment is not necessary if the measured value falls within the standard value.
   If not, loosen the screws that secure the PF Motor, and change the position of the PF Motor adjuster part of the PF Motor attachment location little by little to adjust the belt tension. Repeat Step 3 until the measured value falls within the standard value.

2.3.2 PF Roller Shaft Center Support Position Adjustment

This section describes PF Roller Shaft Center Support Position Adjustment.
This adjustment must be performed to compensate the deflection amount on the PF Roller Shaft and to maintain an appropriate paper feed amount.

☐ Tools

A substitute level block can be used if its surface accuracy is within 50 μ.

- PF Roller Adjustment Jig
- PF Roller Adjustment Jig Stand
- Level Block (When there isn't PF Roller Adjustment Jig Stand)

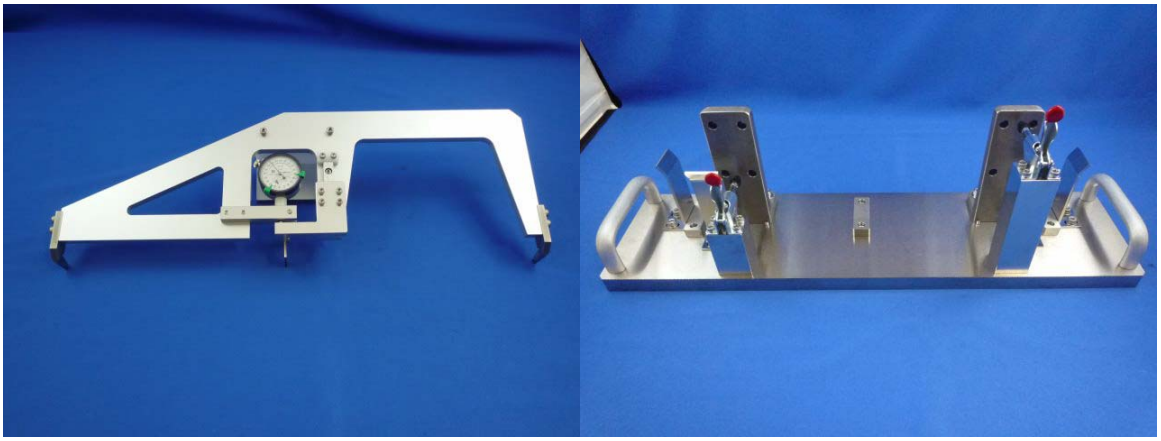


Figure 2-2. PF Roller Adjustment Jig and PF Roller Adjustment Jig Stand

☐ Adjustment procedure

1. Install the PF Roller, and reassemble the unit up to the APG Assy.
   (See "1-4 Disassembly Flowchart of Printer Mechanism Part (3) (p18)" for details.)

2. Install the printer on a level workbench.

Place the printer on a level, warp-free table. This adjustment cannot be performed correctly if it is performed on a warped table.

3. Set the PF Roller Adjustment Jig to the PF Roller Adjustment Jig Stand show in Figure 2-3.

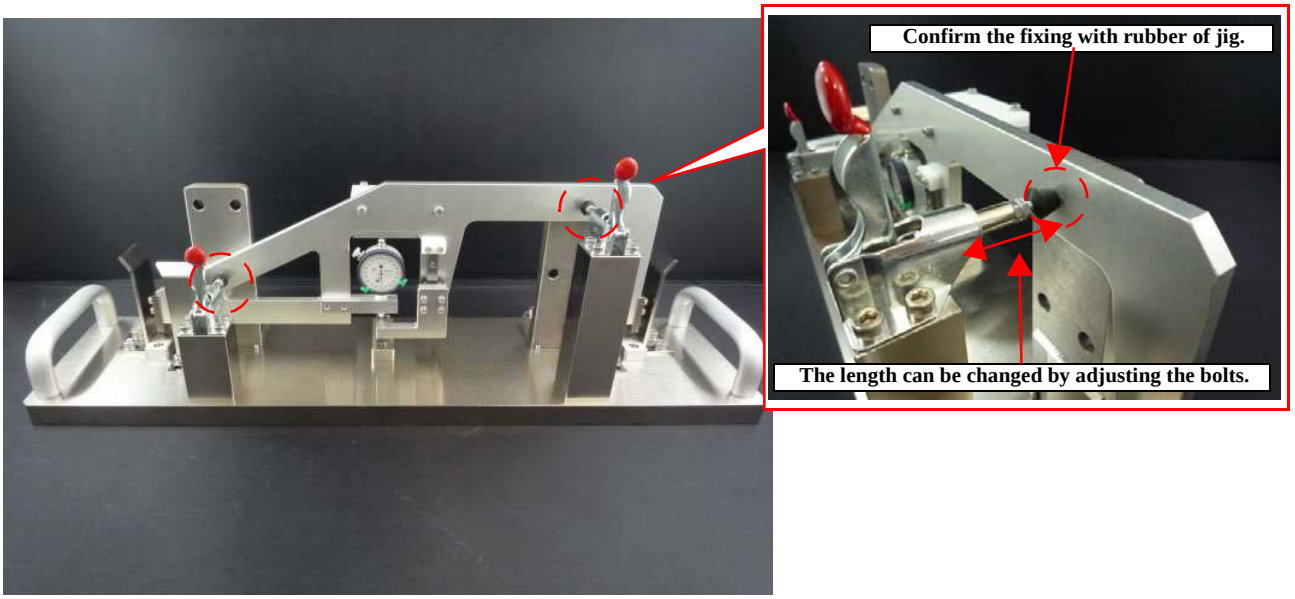


Figure 2-3. Setting the PF Roller Adjustment Jig to the PF Roller Adjustment Jig Stand

4. Perform zero adjustment.

- Long hand position: Turn the dial to adjust the “0” position on the scale to the long hand position with the jig set in place on the PF Roller Adjustment Jig Stand.
- Short hand position: Check it.

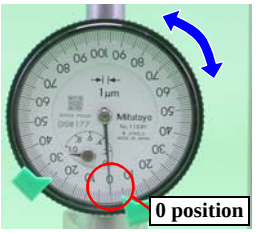


Figure 2-4. Perform zero adjustment

5. Tilt the Printer Mechanism at about 45 degrees, and loosen the screw that secures the Center Support Bushing Cam.

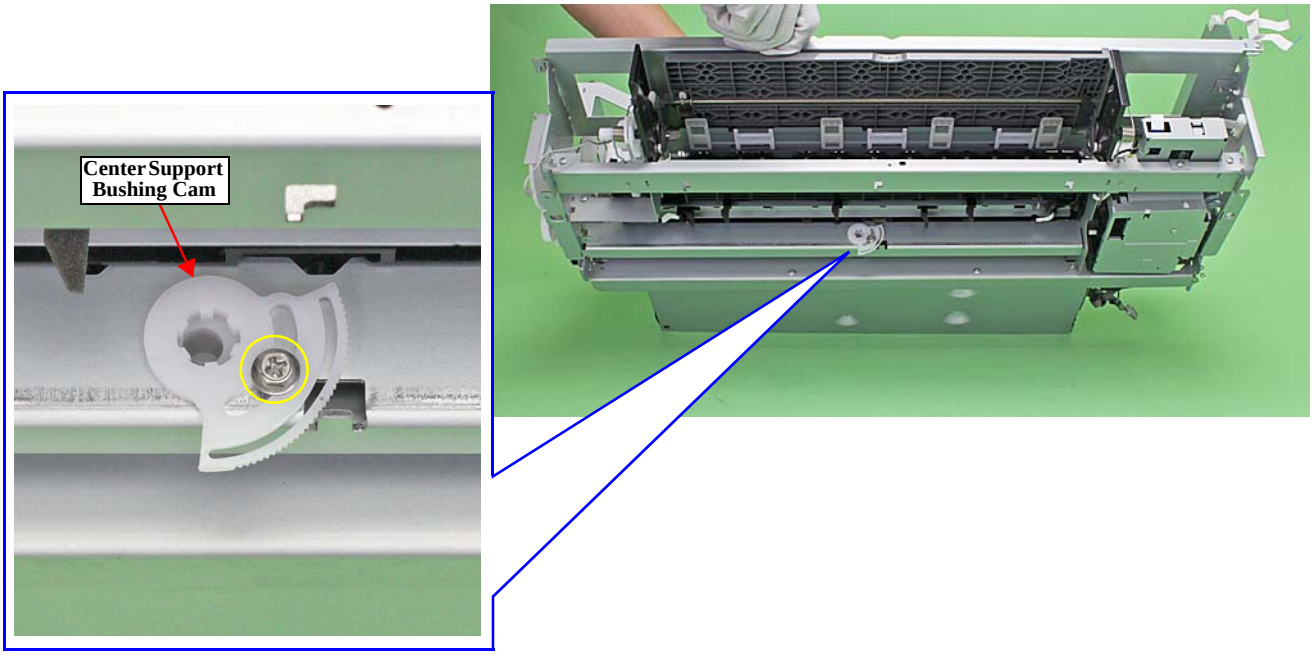


Figure 2-5. Center Support Bushing Cam and the Screw

Check for any dirt on the PF Roller Shaft when performing the following procedure.

6. Set the jig in place on the PF Roller Shaft as shown in the figure below.

   - Left side of the Standard Position: Inside of PF Roller's left end (E-ring)
   - Right side of the Standard Position: Clearance between PF Roller right end (Right Bushing 8) and left end of Upper Paper Guide
   - Adjustment Position: Clearance between the 2nd Upper Paper Guide and 3rd one from the left

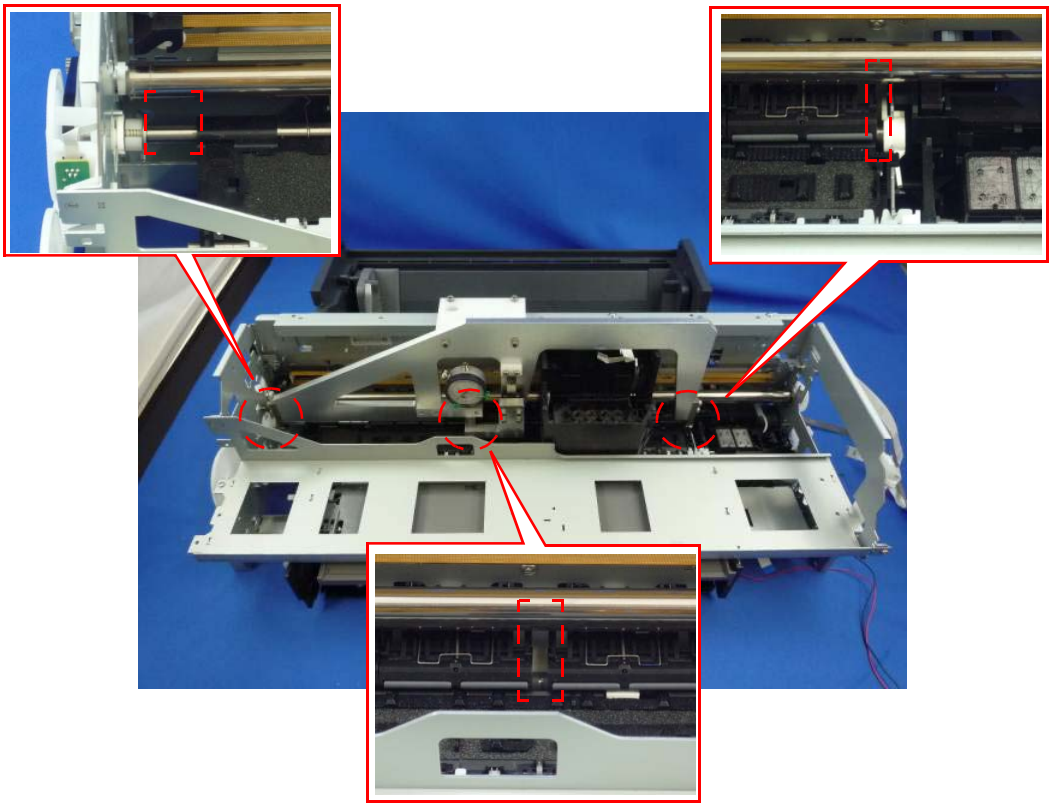


Figure 2-6. Setting the PF Roller Adjustment Jig (1)

7. Press the standard positions to the direction of the back of the printer until hitting the printer.

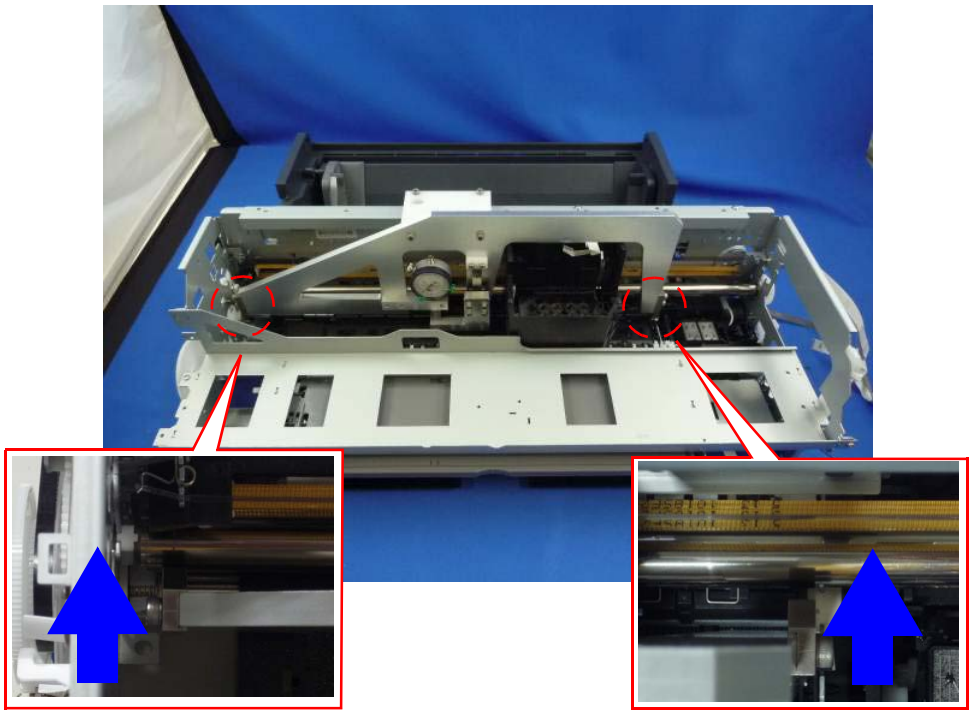


Figure 2-7. Setting the PF Roller Adjustment Jig (2)

The standard range of the PF Roller Shaft Center Support Position Adjustment is as follows:

- **Standard value: -10 µm - 40 µm**

8. Turn the Center Support Bushing Cam so that the long hand position is to between the standard value.

- **Make sure that the position of the short hand is the same as at "0" adjustment.**

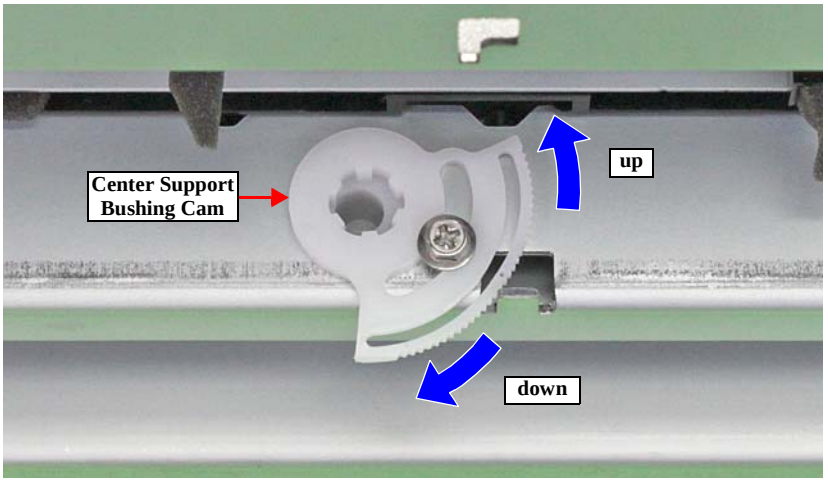


Figure 2-8. Positional Relationship between Center Support Bushing Cam and the Dial Gage

9. Tighten the screw that secures the Center Support Bushing Cam.

Check the adjustment value again as it deviates slightly when the screw is tightened.

The following shows print samples when adjustment of the PF Roller Shaft Center Support Positions are inside and outside the specified value range.

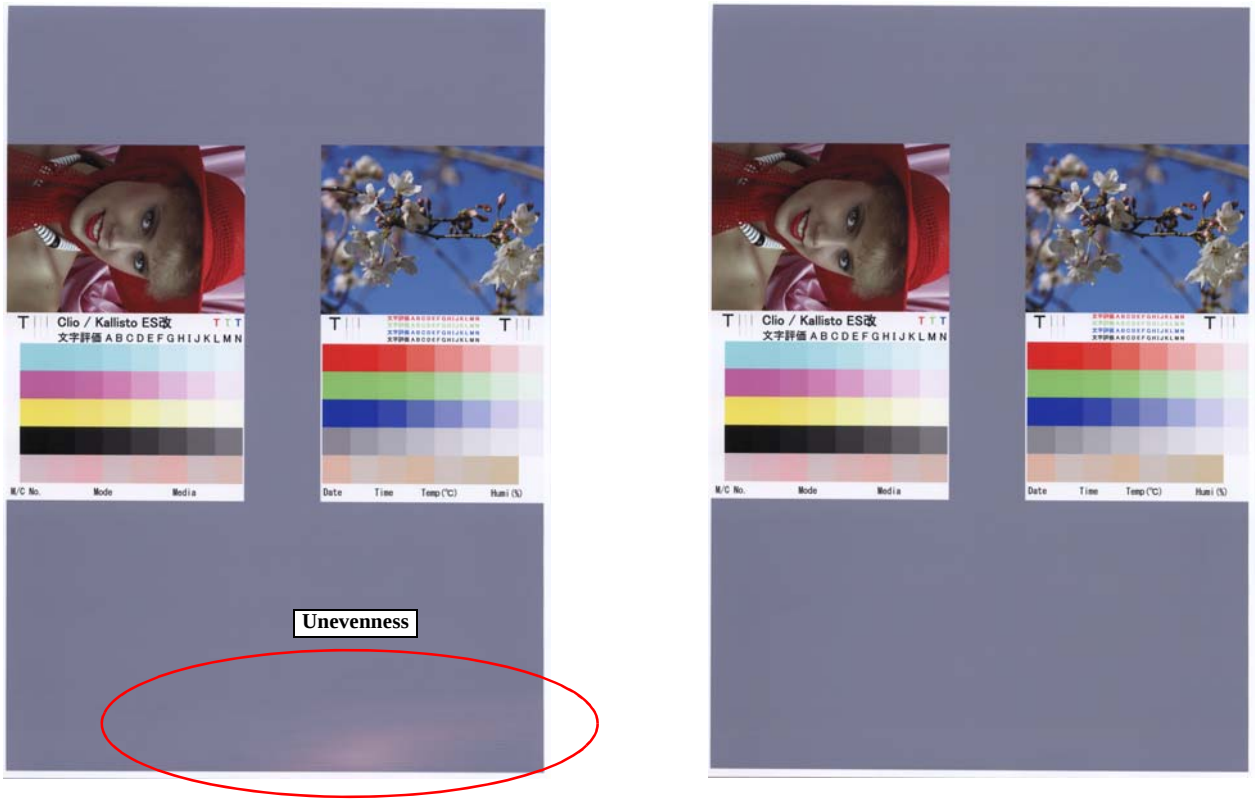


Figure 2-9. Print Sample

2.3.3 ASF Guide Roller LDs position adjustment

This section describes ASF Guide Roller LDs position adjustment.
When installing the LD Roller Guides, the position of the LD Roller Guides must be adjusted so that the positions of the LD Roller Shaft and Retard Roller are optimized in order to maintain the paper feed accuracy.

When only removing the ASF Assy, you do not need to perform this adjustment. In that case, mark the installing positions of the LD Roller Guides before removing them, and make sure to align the markings when installing the LD Roller Guides.

☐ Adjustment procedure

1. After installing the ASF Assy, loosen the screws (x2) that secure the LD Roller Guides.

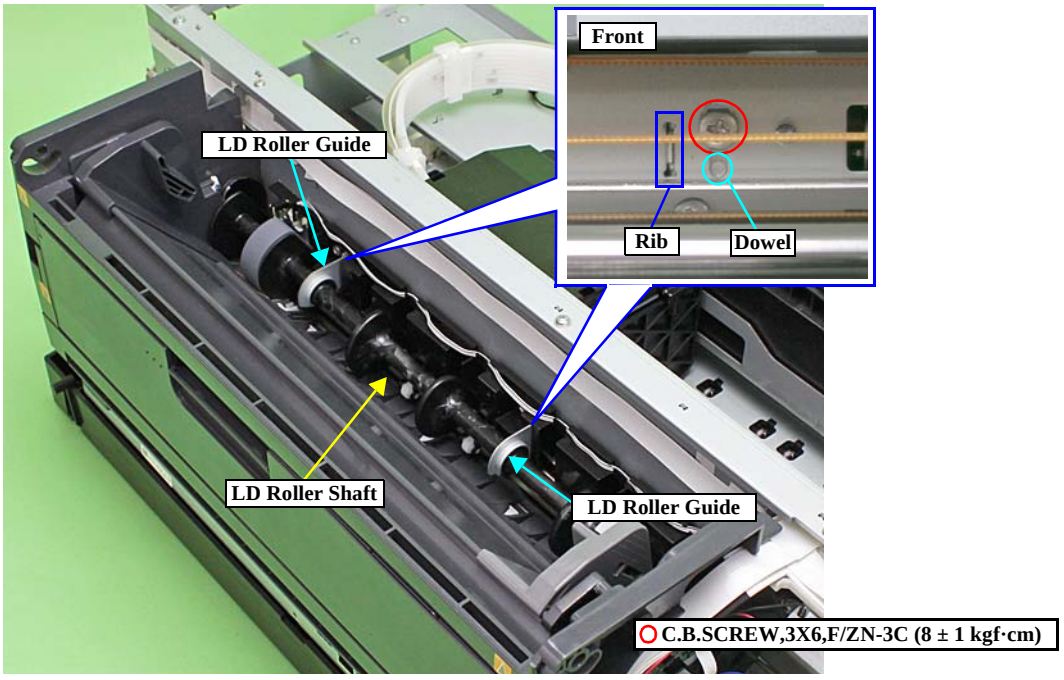


Figure 2-10. LD Roller Guide

2. Turn Combination Gear 29.11 on the right side of the ASF Assy counterclockwise to raise the Hopper to the upper limit position (until the Hopper Pad contacts the LD Roller).

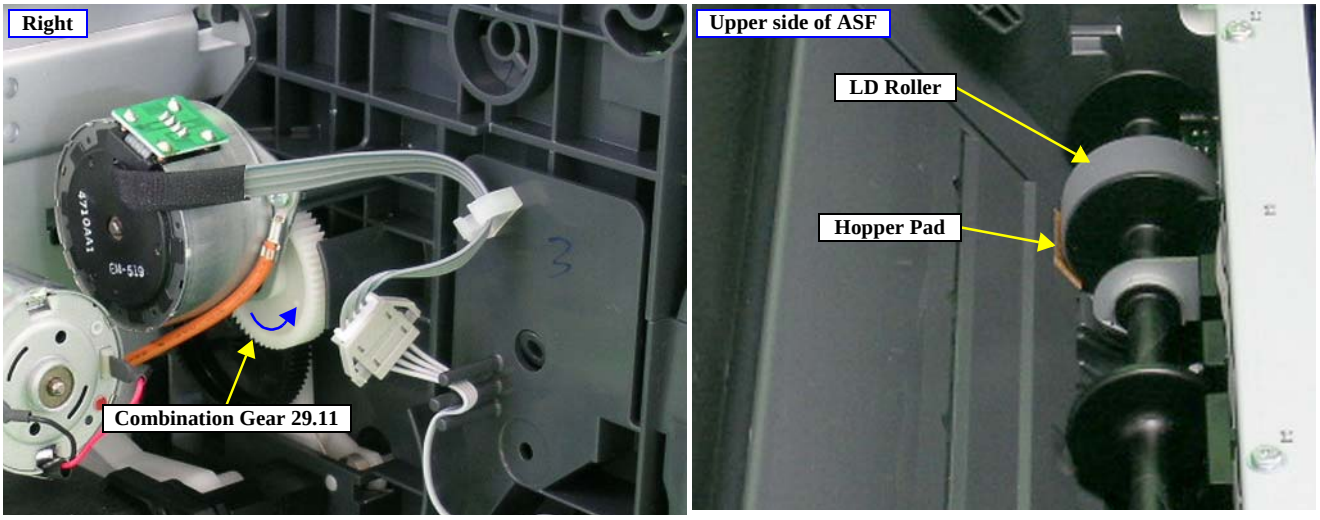


Figure 2-11. Raising the Hopper

3. Light the printer's inside through a gap between the ASF Assy and the Paper Guide (under ASF Assy) with a penlight, and look the tab on the Retard Roller Holder at the back of the two reference tabs on the ASF Assy through the notch. After making sure that the two reference tabs are aligned when viewed edge-on, adjust the position of the Retard Roller Holder Tab by pressing the LD Roller Guide (0-digit side) so that it is placed within the range as shown in the simplified diagram in Figure 2-12.

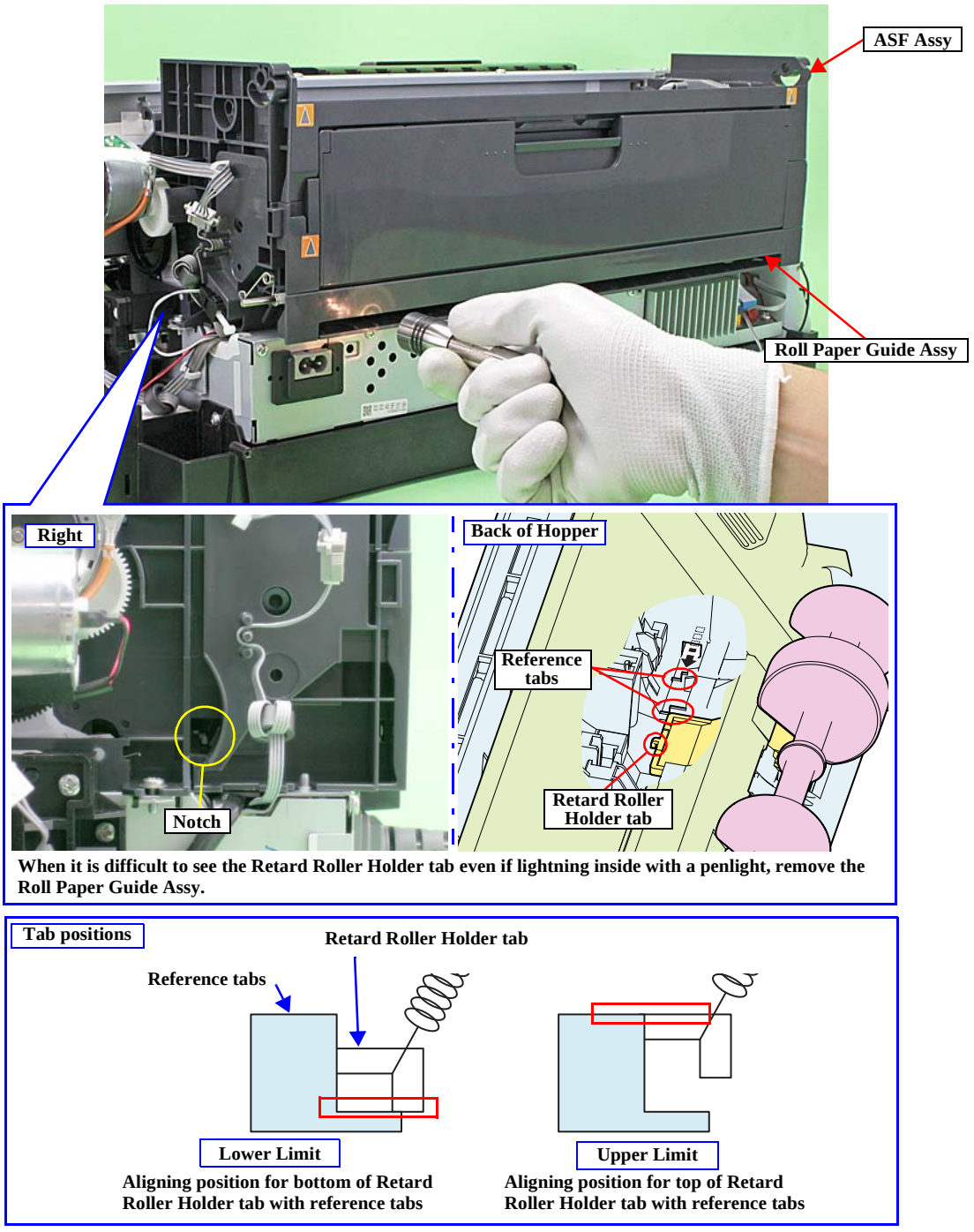


Figure 2-12. Aligning the Position of the Guide Roller LD (0 Digit Side)

4. Align the guide pin and rib on the 0-digit side LD Roller Guide with the positioning holes on the Main Frame, and tighten the LD Roller Guide (0-digit side) with the screws. (See Figure 2-13)

5. Check the position of the Retard Roller Holder tab again through the notch. If it is not inside the range, remove the screws on the LD Roller Guide (0-digit side), and repeat Step 2 to Step 4 to set the tab within the range.

6. Check the gap in both ends of the positioning hole that the rib of the LD Roller Guide is inserted. And align LD Roller Guide (130-digit side) to the same height, and tighten with the screws.

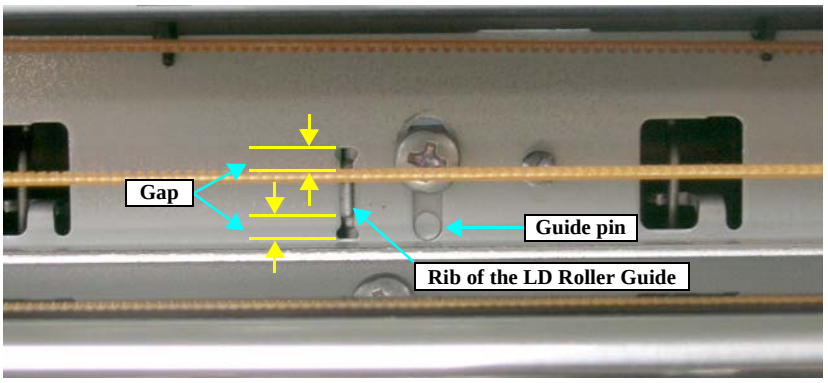


Figure 2-13. Checking the Position of Rib of the LD Roller Guide

The following are the possible troubles for misadjustment.

Tab Position	Trouble
Above upper limit	Paper feed mistakes caused by non-feed
Below lower limit	Multiple-sheet feeding

2.3.4 PG Adjustment

This section describes PG Adjustment.
This adjustment must be performed to secure the specified clearance between the print surface of the Printhead and paper.

To change the PG position, turn the cam each on the left and right side of the carriage shaft simultaneously.

☐ Tools

■ Adjustment gauge

In this adjustment, use the same adjustment gauge on the left and right sides.

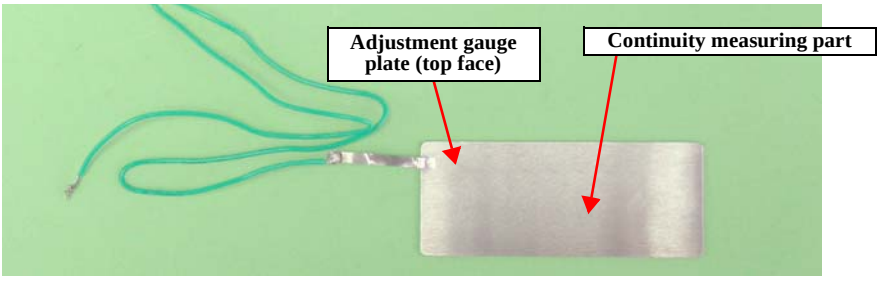


Figure 2-14. Adjustment Gauge

- **Do not touch the surface of the adjustment gauge plate with bare hands.**
- **Before performing this adjustment, clean the adjustment gauge with a soft cloth moistened with Shipping Cleaning Liquid "CR06" (parts number: 6104713(1kg), 6104714(18kg)).**

☐ Adjustment procedure

- **Before starting PG Adjustment, completely wipe drops of ink around the Print Head. Remaining drops of ink will stick to the continuity measurement point of the adjustment gauge, and cause continuity before the continuity measurement point makes contact with the metal frame around the Print Head, interrupting accurate PG Adjustment.**
- **As the ink in the Print Head may stick fast and damage the Print Head during PG Adjustment, make the continuity time detected with a tester as short as possible. (Maximum three minutes.)**
- **Move the CR Unit by moving the timing belt.**
- **Place the printer on a level, warp-free table. PG Adjustment cannot be performed normally on a warped table.**
- **Make sure that the Ink Supply Unit and the CR Support Plate are secured when performing the PG Adjustment.**

1. With the following parts removed, install the printer on a level workbench and move the CR Unit to the center of the printer.

   - Rear Housing
   - Left / Right Cover
   - Left / Right Decoration Plate
   - Adjust Printer Cover
   - Upper Housing Support Assy
   - Upper Housing Assy
   - CR Cover

2. Connect the tester to the upper section of the 130-side on the frame and adjustment gauge.

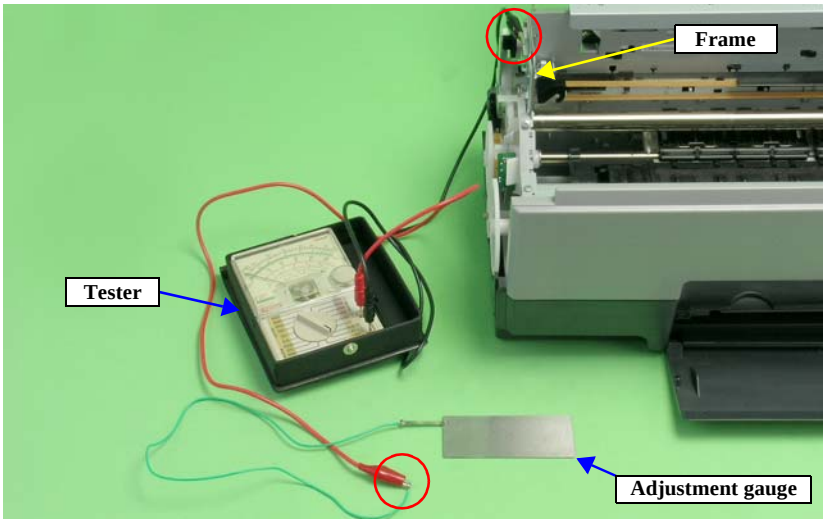


Figure 2-15. Connecting the Tester (Example)

Before disassembling the unit, mark the contact points on the Parallelism Adjust Bushings (x2) with the rib of the frame, and align the markings with the rib when reassembling them. (See Figure 2-16.)

3. Loosen the screws (x2) that secure the Parallelism Adjust Bushings (x2), and align the markings (marked when disassembling) with the frame.

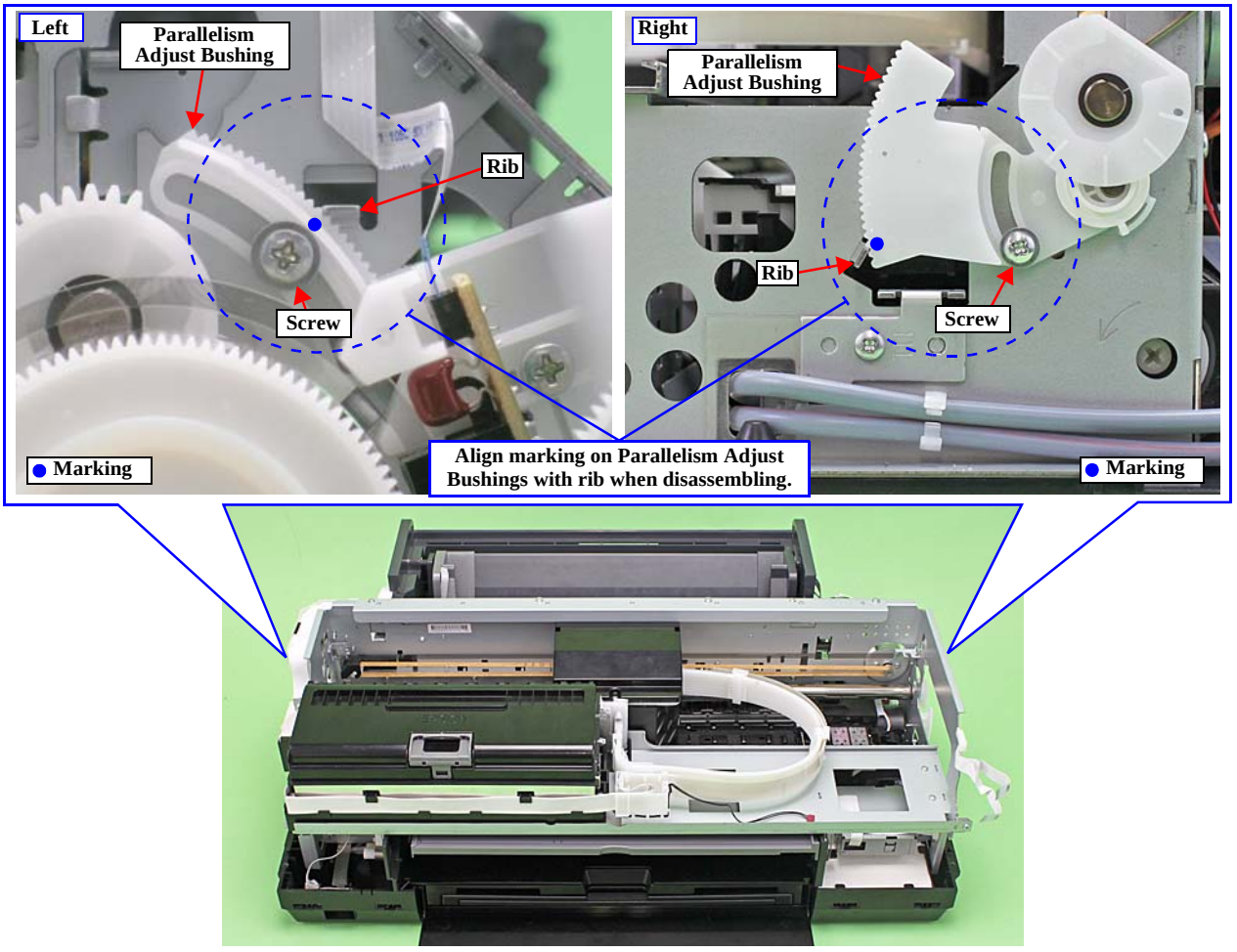


Figure 2-16. Setting the Parallelism Adjust Bushing

4. To set the PG position to the “5” position, turn the PG Cam on the right end of the Carriage Shaft counter clockwise (CCW) so that the point marked “5” faces down.

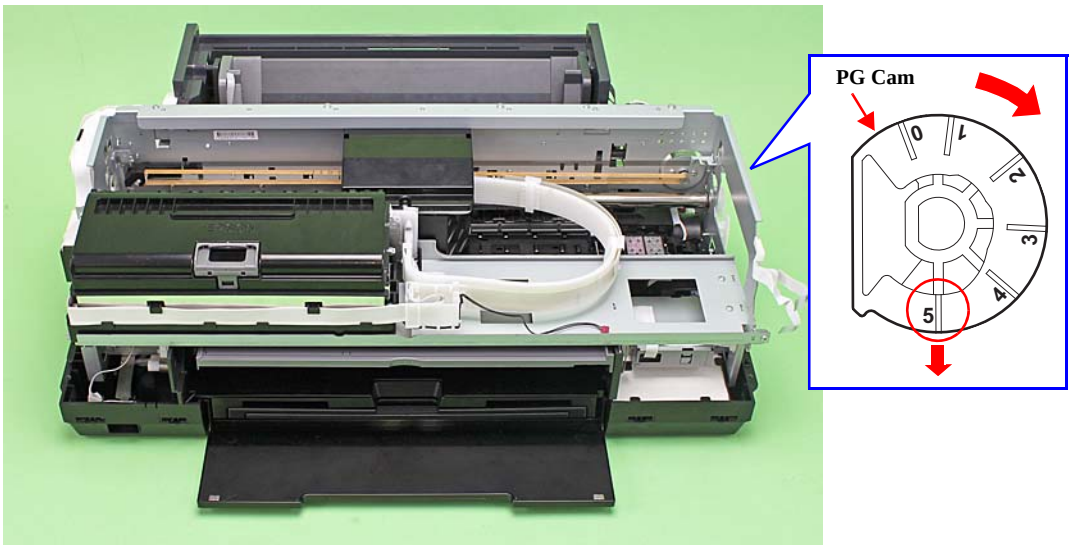


Figure 2-17. PG Cam Position

5. With the conductor connection portion of the adjustment gauge up, set the gauge in the specified position (on the left side of the Front Paper Guide Assy).

   ■ Setting Position
   Rear direction: Align the rear end of the gauge with the Driven Roller Shaft of the Upper Paper Guide Assy.
   Left direction: Align the left end of the gauge as shown in Figure 2-18.

6. Move the CR Unit onto the adjustment gauge.

   ■ Moving position
   Align the left end of the gauge with the left end of the CR Unit.

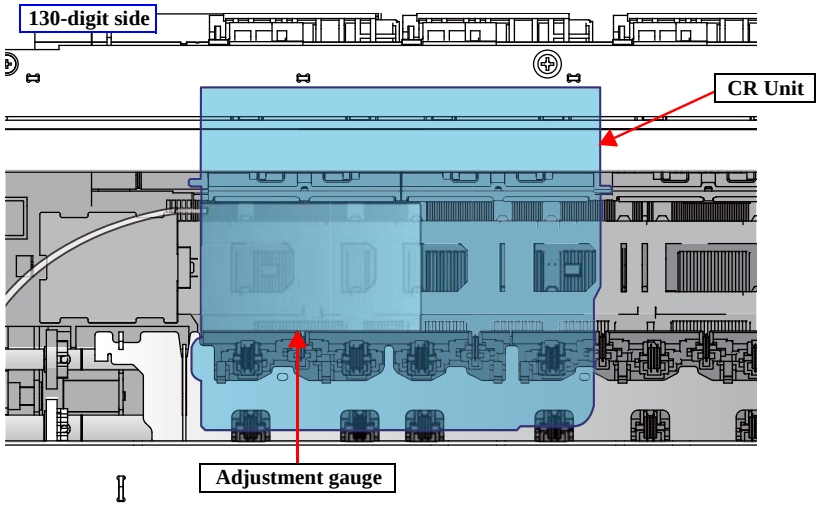


Figure 2-18. Setting the Adjustment Gauge

7. To set the PG position to “0”, turn the PG Cam on right end of the Carriage Shaft clockwise (CW) so that the point marked “0” faces down. (See Figure 2-17.)

■ **PG standard value**
  • **PG position “0”: 1.05 mm - 1.25 mm**
■ **Adjustment resolution: 0.06 mm**

8. Lower the gear of the Parallelism Adjust Bushing on the left side of the frame stepwise, and confirm continuity. When continuity is confirmed, define the position where the gear was raised one step up from the continuity position (where continuity is lost) as the left side PG position. Move the Parallelism Adjust Bushing at least twice to confirm that the continuity position and the noncontinuity position are the same.

The following figure shows the states of the Adjust Parallel Bushing of the left side of the frame and the PG.
(This also applies to the Adjust Parallel Bushing on the right side of the frame.)

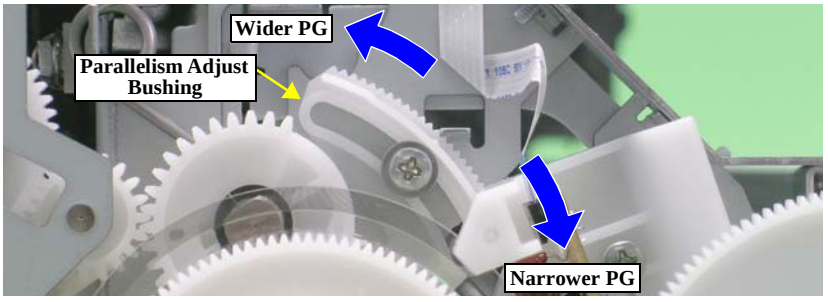


Figure 2-19. Relationship between Parallelism Adjust Bushing and PG

9. To set the PG position to “5”, turn the PG Cam on right end of the Carriage Shaft counterclockwise (CCW) so that the point marked “5” faces down. (See Figure 2-17.)
10. With its conductor connection portion down, set the adjustment gauge in the specified position (on the right side of the Front Paper Guide Assy).
    - Setting Position
      Rear direction: Align the rear end of the gauge with the Driven Roller Shaft of the Upper Paper Guide.
      Right direction:Align the right end of the gauge with the position shown in Figure 2-20.
11. Move the CR Unit onto the adjustment gauge.
    - Moving position
      Align the right end of the gauge with the right end of the CR Unit.

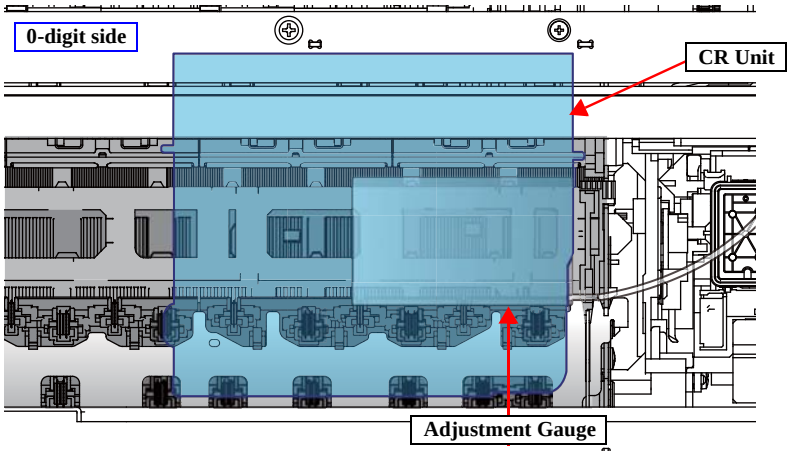


Figure 2-20. Setting the Adjustment Gauge

12. To set the PG position to “0”, turn the PG Cam on right end of the Carriage Shaft clockwise (CW) so that the point marked “0” faces down. (See Figure 2-17.)
13. As in Step 8, move the Parallelism Adjust Bushing on the right side of the frame to set the right side PG position.
14. Set the PG position to “5”.
15. Set the adjustment gauge on the left side of the Front Paper Guide Assy.
16. Move the CR Unit onto the left side adjustment gauge.
17. Return the PG position to “0”.
18. Check continuity again at the PG position on the left side. If the PG position is not out of position, tighten the Parallelism Adjust Bushing with the screws to complete the adjustment. If it is out of position, repeat the adjustment procedure from Step 8.

2.3.5 Mist Recovery check

This section describes Mist Recovery check.

☐ Tools

- ■ Adjustment Program
- ■ Oscilloscope or Tester + High-voltage probe

(Refer to "1.1.2 Jigs (p10)" about the recommendation maker and model number)

☐ Adjustment procedure

1. Start the Adjustment Program.
2. Select the Mist Recovery check and turn the high voltage module ON.
3. Using a High-voltage probe, measure the voltage between the 130-digit side frame and the plate under the Front Paper Guide Assy.

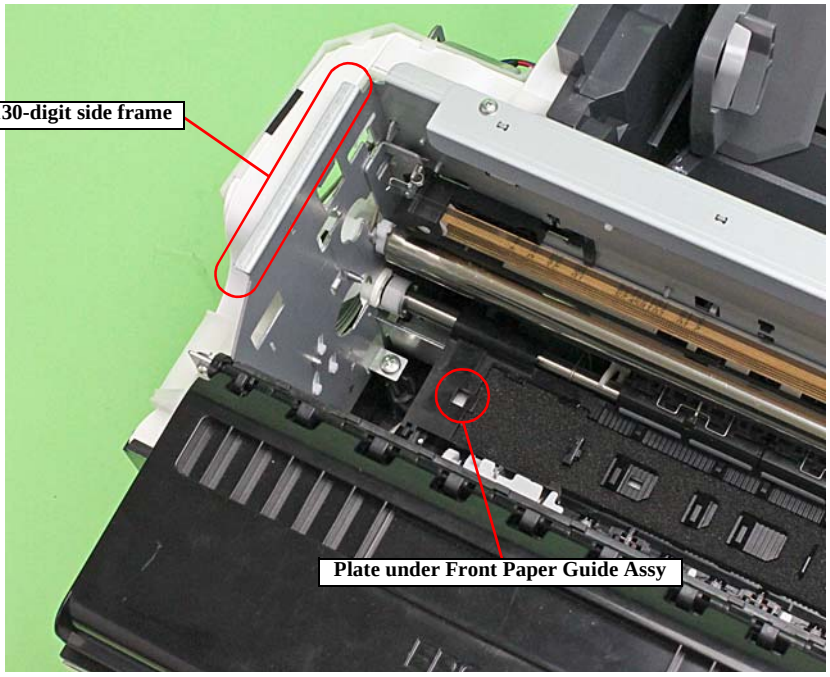


Figure 2-21. Measuring the Voltage

The standard value of the Mist Recovery check is as follows:

- ■ **Standard value: 380 ± 30 V**

(If the device which can measure resistance value of 100MΩ is not used, you may not measure a value definitely. As a result, there is the case that a parameter is not set within a standard, the Mist Recovery Function does not act, and dirt in the printer or printing back side dirt of the paper occur.)

4. Confirm the voltage is within 380V ± 30V. (When you use the recommended tester and the High Voltage Probe, the voltage is recorded with 1/1000. Please confirm with the value of thousandfold.)
5. Turn the high voltage module OFF.

2.3.6 Initial setting

- **This setting is not necessary when the data in EEPROM on the Main Board can be read out.**
- **To avoid a conflict of MAC address on a network, make sure to correctly follow the MAC address setting flowchart given on the following.**
- **The user should be notified of the change of MAC address because of the following reasons.**
  - **If the user has set the printer's MAC address on a router, the repaired printer with a new MAC address cannot be connected to the network.**
  - **The default printer name on a network consists of "EPSON" and the last six digits of the MAC address. Therefore, the printer name becomes different from the previous one.**
- **You are required to enter the last six digits of the MAC address (xx:yy:zz) on the Adjustment Program.**
  MAC address example: 00:00:48:xx:yy:zz
  ("xx, yy, zz" represents a value unique to each printer)

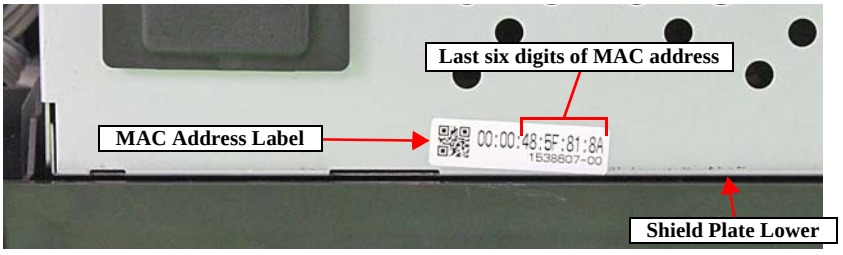


Figure 2-22. MAC Address Label

☐ Setting procedure

1. After replacing the Main Board, note down the MAC address written on a label on the Shield Plate Lower.
2. Connect the printer and the PC with the USB cable.
3. Start the Adjustment Program.
4. Select the "Initial Setting" from the menu. The initial setting screen appears.
5. Click the check boxes you need to perform the initial setting.
6. Input the last 6 digits on mac address into the blanks. (If you need to input full mac address, Click Full Input.)
7. Press Perform button and make sure the configuration is proper by Pressing Check button.

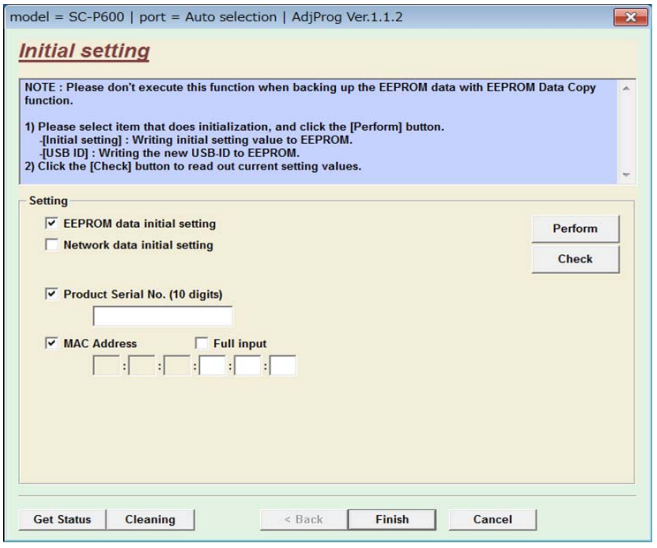


Figure 2-23. Initial setting Screen

2.3.7 Head Angular Adjustment CR/PF

This section describes Head Angular Adjustment CR/PF.

Basically, set the head angular adjustment lever on the CR Unit on the center position.

- ☐ Tools
  - ■ Adjustment Program
- ☐ Adjustment procedure

1. Select the Head angular adjustment, and print the adjustment pattern.
2. Examine the printout patterns (–6 to +6) in the Band pattern, and enter the values of the most straight lines. Make sure of the each direction. (0 >> 80 and 80 >> 0).
   - ■ Case 1: the straight line is inside the range from -6 to +6.
     Input the values of the most straight line and Press Input button.
   - ■ Case 2: the straight line is NOT inside the range from -6 to +6.
     Refer to Figure 2-25 and Adjust the head angular using Head angular adjustment lever.
     Refer to Table 2-4 because the direction of the adjustment is depended on the direction of the printed patter
     After adjustment, perform Step 2 again until the straight line is inside the range from -6 to +6.
3. Examine the printout patterns (+3 to –3) in the Raster Offset pattern, and select the value for the group of which the gaps between the 2 color bars are the smallest, and then click the Input button.

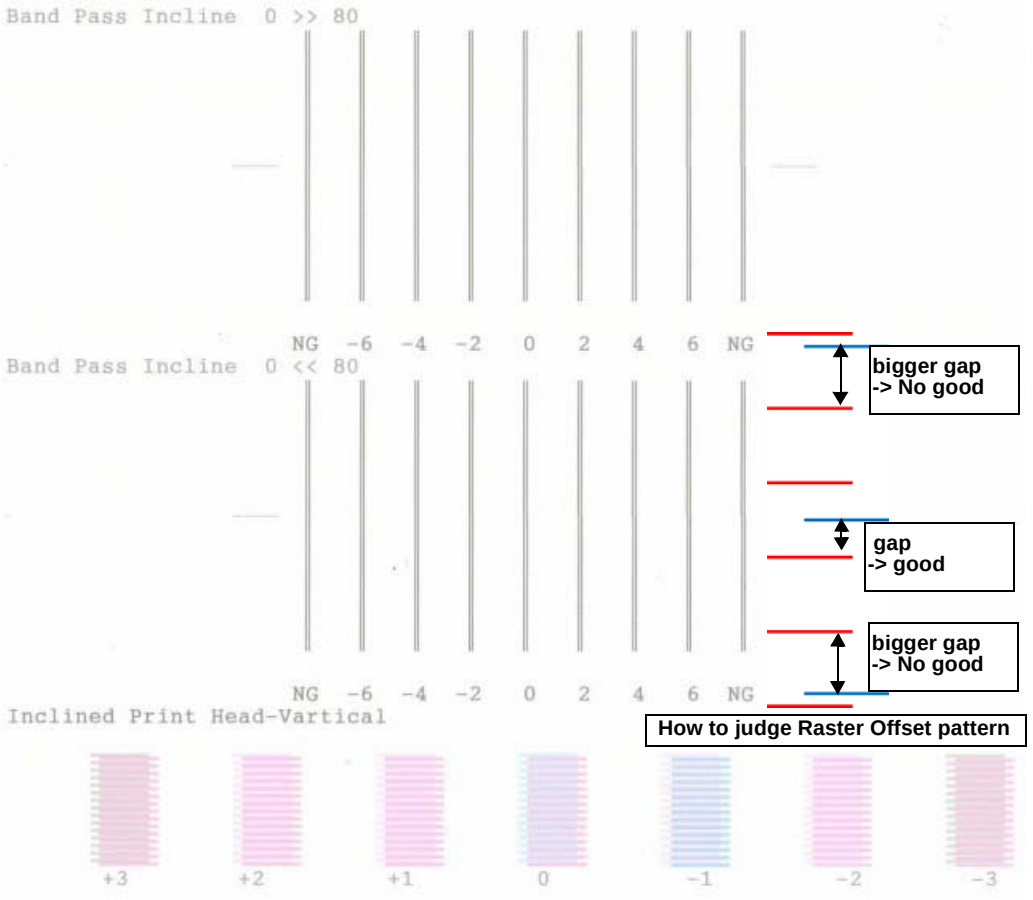


Figure 2-24. Adjustment Pattern

Make sure to use tweezers when adjusting the head angular adjustment lever.

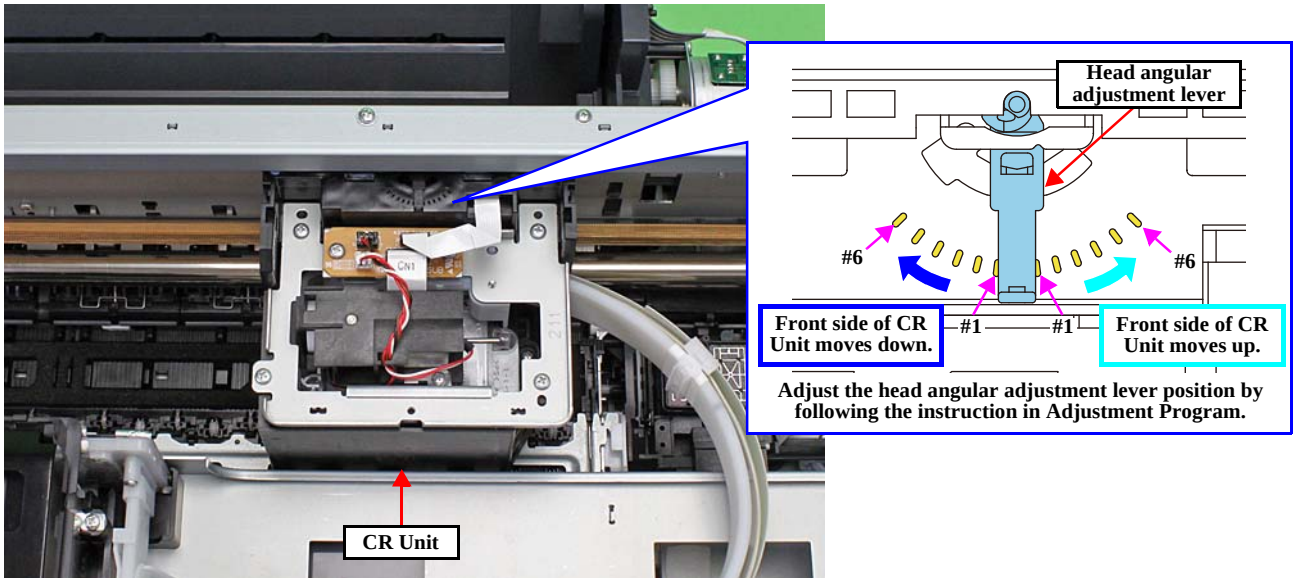


Figure 2-25. Adjustment in the PF Directio

Table 2-4. Relation between adjustment pattern and Head angular adjustment lever

	Adjustment direction of the Head angular adjustment lever	
	Rotate toward left from center (Clockwise direction)	Rotate toward right from center (Counter-Clockwise direction)
0 >> 80 Print from Home side to Full side		
0 << 80 Print from Full side to Home side		

2.3.8 Colorimetric Calibration

2.3.8.1 Overview of the Colorimetric Calibration

☐ Purpose

It can make revision values which adjust printing color of user's printer and SEC standard unit equally.

The following parts have an influence on ink discharge, therefore revision is necessary after part exchange.

- Print Head
- Main Board
- Power Board

This revision values are applied to the EPSON genuine printer driver.

☐ Tools

Table 2-5. Tools for Colorimetric Calibration

Tools	Purpose / Specification
Plain paper (A4/Letter)	For checking the nozzles.
Ultra Premium Presentation Paper Matte Enhanced Matte Paper, Archival Matte Paper (A4/Letter)*1	For printing the calibration chart.
Colorimetric Calibration application	EPSON ColorBase2 (application for user)
PC	OS: refer to Table 2-6. The following files must be installed on the PC: - Printer driver for the model to be adjusted - Adobe AIR Runtime*2
Calibrator*3	X-Rite i1Pro (with UV filter) or i1Pro2
White reference tile	Accessory of calibrator
Scanning ruler	Accessory of calibrator
Backing board	Accessory of calibrator
Premium Glossy Photo Paper	For using as a background of the color chart during scanning (only when a backing board is not attached to calibrator).
Two USB cables	For connecting printer and calibrator to PC with two USB cables.

*1) The Service Mode cannot select "Premium Photo Paper Glossy" and "Premium Glossy Photo Paper" which you can use for PK ink by the User Mode.

*2) It is downloaded automatically if connected to the network when a PC starts EPSON ColorBase2.

*3) The Service Mode cannot select i1iO, i1iSis, ColorMunki which you can use by the User Mode.

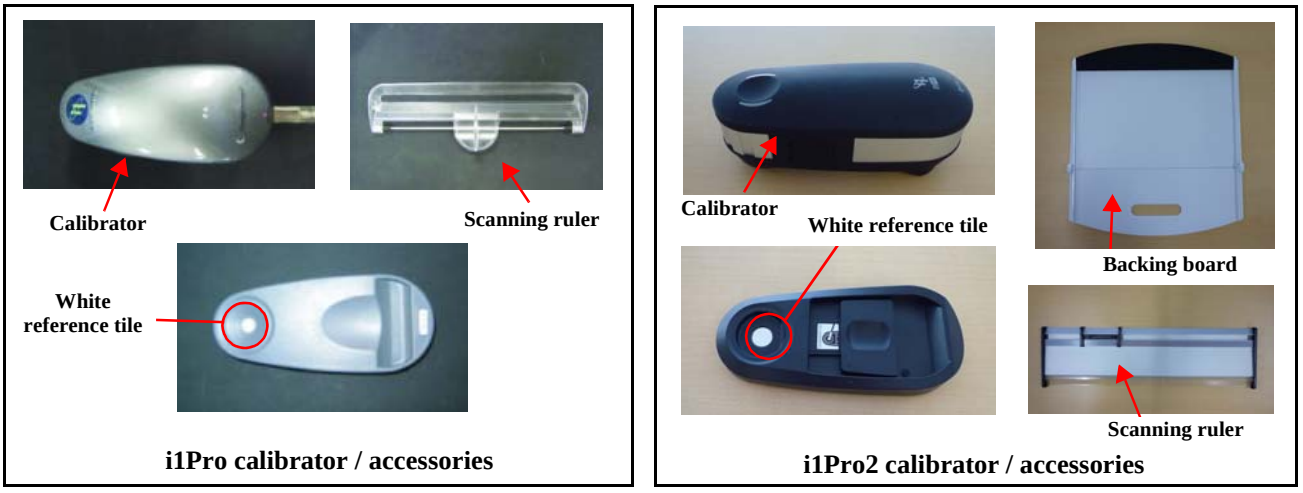


Figure 2-26. Calibrator and accessories

Table 2-6. Support OS of EPSON ColorBase2

OS	bit	(reference) User Mode	Service Mode
Windows XP SP3	32	O	O
	64	O	---
Windows Vista	32/64	O	---
Windows 7 SP1 or later	32/64	O	O
Windows 8 / 8.1	32/64	O	O
Mac OS X (10.7.x, 10.8.x, 10.9.x)		O	---

☐ Calibration principle

Measuring a color chart print result (ink discharge amount) in a calibrator.Created Color ID information based on the obtained color difference values (L*, a*, b*) is stored on the printer.When printing, the printer driver takes the Color ID to correct the number of ink droplets (dot generation rate) for each of different sized droplets of each colors.

☐ Correlation with Head ID adjustment

Head ID: In the print head manufacturing process, ink discharge amount of each head is actually measured to get individual characteristic information. The information is the Head ID that was set to revise a characteristic difference between the heads. The Head ID is shown with a label on the each print head, therefore you must input the Head ID to the printer after print head exchange.

- **Before performing Colorimetric Calibration, the conventional Head ID must be pre-registered.**
- **If you do not perform Colorimetric Calibration after performing Head ID adjustment, the printer will be controlled only by the Head ID. In that case, the color precision is not guaranteed.**

☐ Flow of the Colorimetric Calibration

The following steps show the Colorimetric Calibration:

1. Print a nozzle check pattern. If there is nozzle missing, run a head cleaning.
2. Print a color chart with the printer which you want to calibrate via ColorBase2.
3. Scan the printed color chart with a calibrator.
4. ColorBase2 calculates a Color ID from the scanning result and calculation parameter of the colorimetric calibration.
5. Write the Color ID to the printer. When printing, printer driver refers to the data of the User Color ID area.

☐ Correlation with User adjustment and Service adjustment

The following table shows a correlation with user's calibration.

Table 2-7. Correlation with User adjustment and Service adjustment

	User adjustment	Service adjustment
Calibration timing	■ When the installation location changes. ■ When the printer has not been used for an extended period of time. ■ When you are concerned about changes in the color tones.	■ After the following parts exchange: • Print Head • Main Board • Power Board ■ When reduce unit-to-unit variations in color.
ColorBase2 operation mode	User Mode	Service Mode
Recording area of Color ID	Only recording to the "User Color ID area".	Same data is recorded to the following two areas: • "User Color ID area" • "Production Color ID area"
"Initializing *1the Color ID" operation contents	"User Color ID area" is overwritten by the data recorded in the "Production Color ID area".	

*1) Menu title in the ColorBase2: "Maintenance" > "Restore Default Calibration" (refer to "2.3.8.3 Maintenance menu (p68)")

After changing Print Head / Main Board / Power Board, the Color ID data which recorded in the "Production Color ID area" must be changed from Service Mode of the ColorBase2. When a user carries out "Initializing the Color ID" as the Production Color ID is not changed, a mismatch occurs between the Color ID and characteristic of changed part, then an appropriate color calibration is not performed.

2.3.8.2 Adjusting Method of the Colorimetric Calibration

☐ Adjusting workflow

The following illustrates the overall workflow.

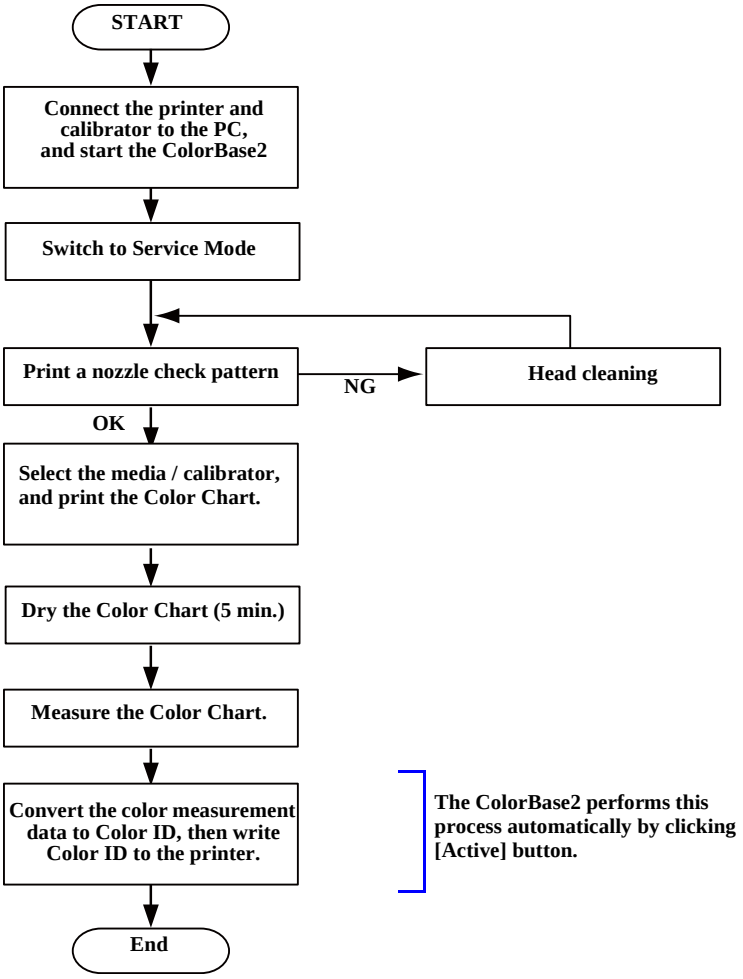


Figure 2-27. Overall Workflow

To enhance the color accuracy, the ink churning is recommended before starting the Colorimetric Calibration. Remove the ink cartridges, and shake them four or five times, then reinstall them to the printer

☐ Procedure

1. Connect the printer and the calibrator with the PC to which the ColorBase2 is installed using USB cables.
2. Turn the printer on.
3. Start up the ColorBase2.
4. Switch to Service Mode from the main menu screen: Click a point to show in "O" of the Figure 2-28 in the pointer of the mouse in turn.
5. Input "7777" in the "enter password" cell, then click [OK] button (the password is fixed and cannot change).

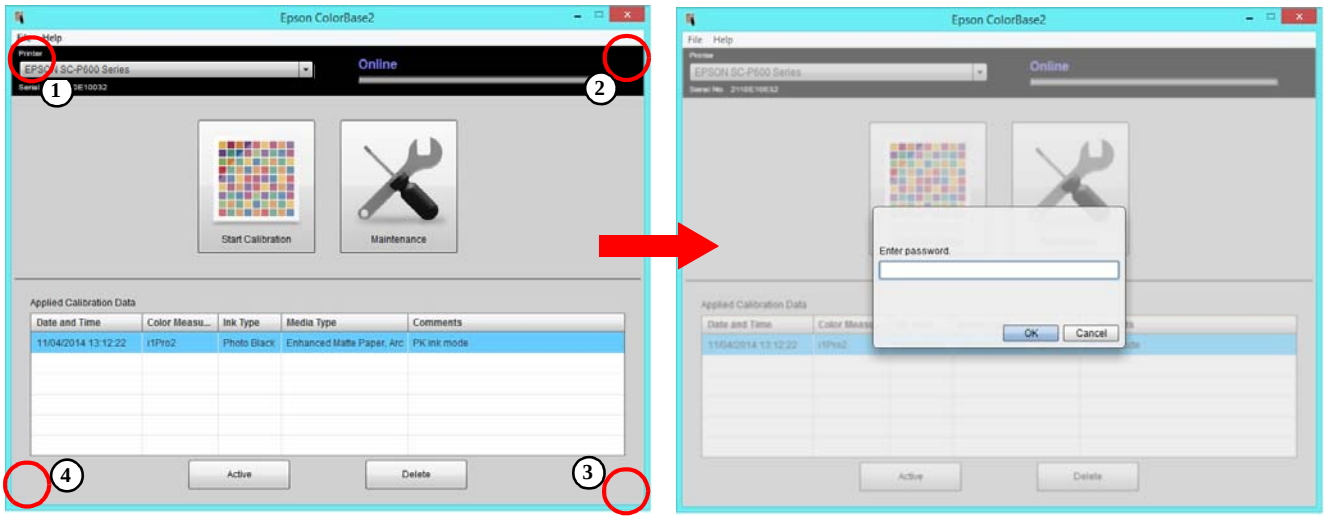


Figure 2-28. Switching to Service Mode

6. Click [Start Calibration] icon in the main menu screen.

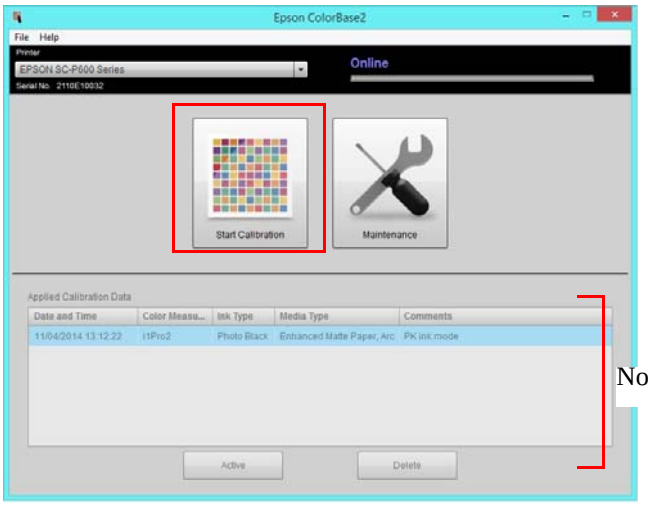


Figure 2-29. Screen of the starting calibration

The list of "Applied Calibration Data" cannot be referred in the service mode.

7. Click Nozzle Check to execute the check.
8. Check the printed nozzle check pattern.
   - When there are broken lines or missing segments

     Click Head Cleaning to execute the cleaning, then reprint a nozzle check pattern and check it.
   - When there are no broken lines or missing segments

     Click Next to go to the Print Color Chart screen.

- **The Next button becomes active after the Nozzle Check is executed.**
- **If there are broken lines or missing segments, repeat the head cleaning until they are eliminated.**

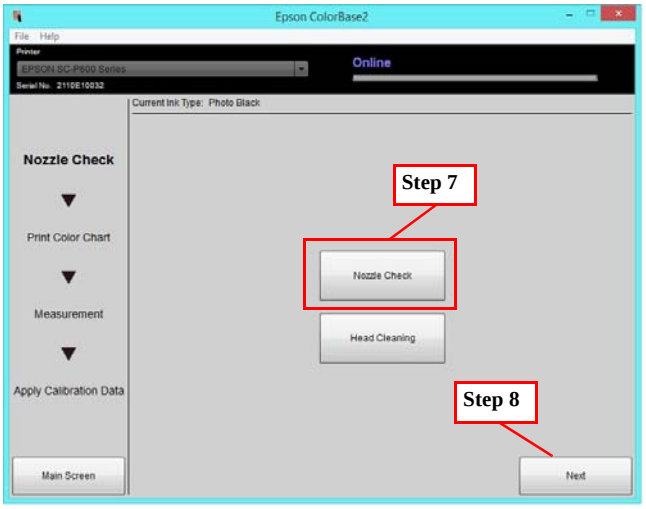


Figure 2-30. Nozzle Check screen

9. Select the following on the Print Color Chart window.

- Media Type: Ultra Premium Presentation Paper Matte / Enhanced Matte Paper, Archival Matter Paper
- Paper Size: A4 / Letter
- Color Measurement Device: i1Pro (UV removal) / i1Pro2

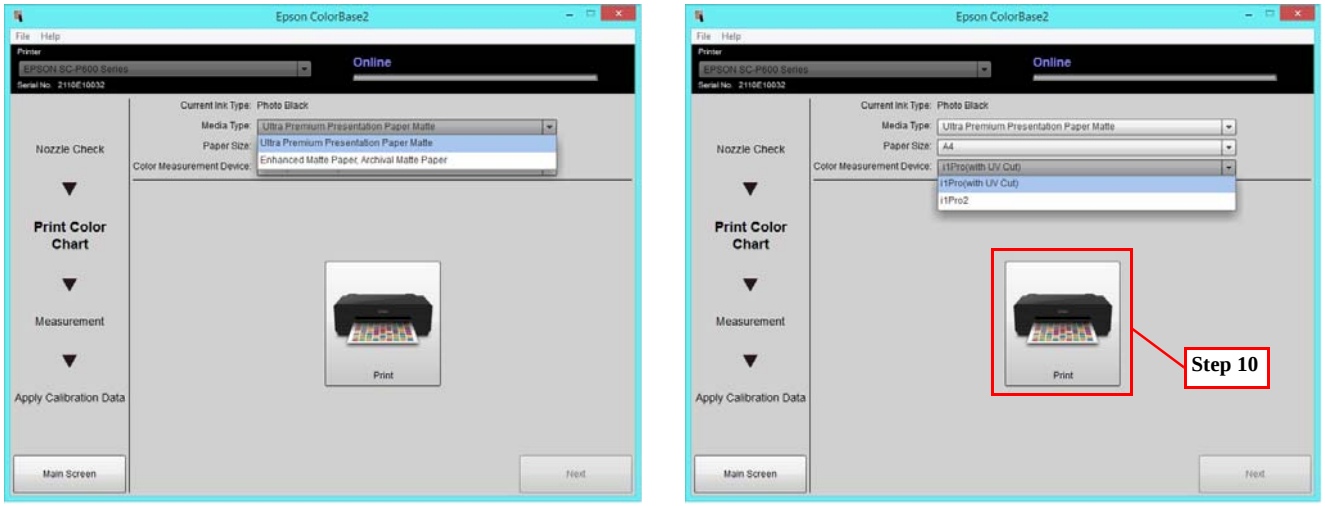


Figure 2-31. Print Color Chart setting

10. Click the Print icon and load a sheet on the ASF, then print the chart.

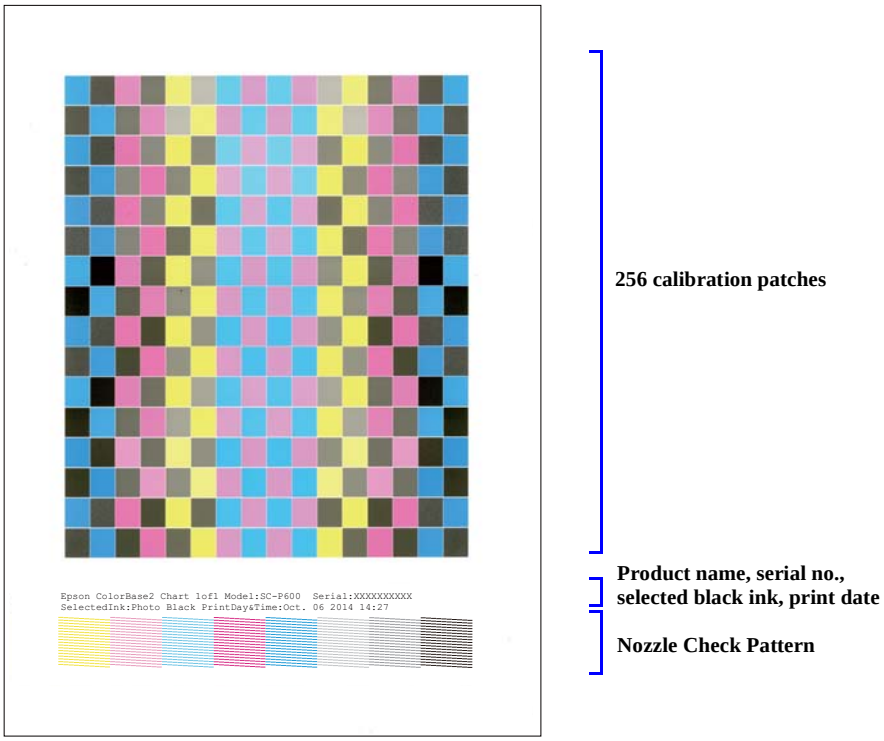


Figure 2-32. Illustration of Calibration Chart (Service Mode)

- **The recommended air temperature range for printing a Calibration Chart is 15 degrees to 28 degrees.**
- **The contents of the color chart differ between the User Mode and the Service Mode. (No row or column numbers of the patches are printed in the Service Mode, but the nozzle check pattern is printed instead.)**

11. Confirm there is no dot missing in the nozzle check pattern on the bottom of the color chart. If any are found, run a cleaning from the panel menu on the printer, and then click “Print again”.
12. After drying is complete (after 5 minutes has passed), click Next to go to the measurement window.

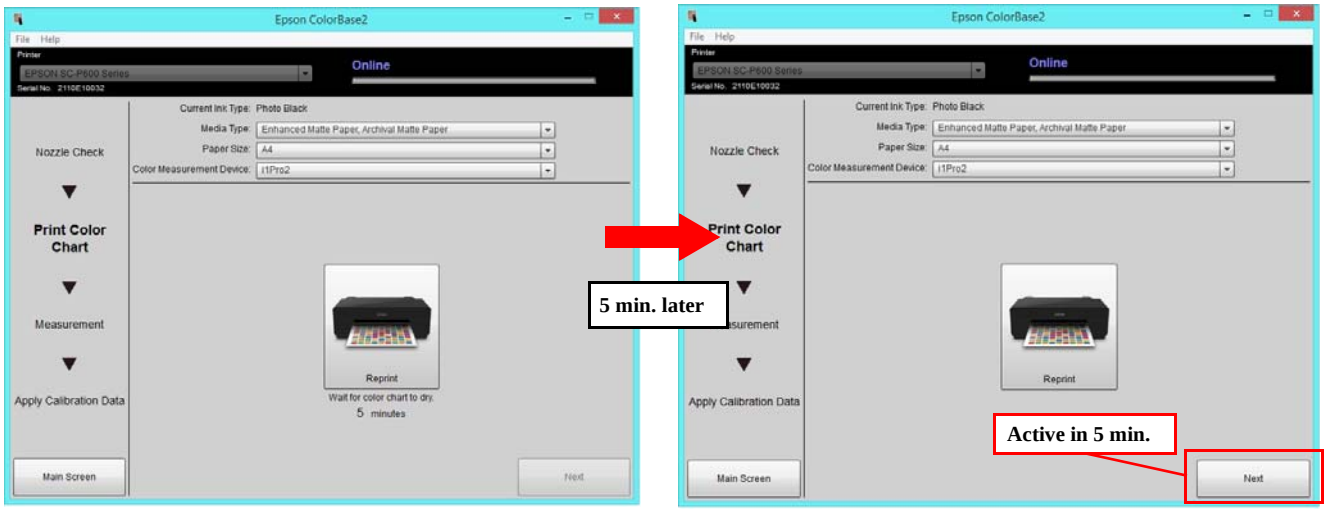


Figure 2-33. Drying the Chart

13. Confirm the calibrator is connected, click OK.
14. Place the calibrator on the white reference tile (white plate) and click OK.

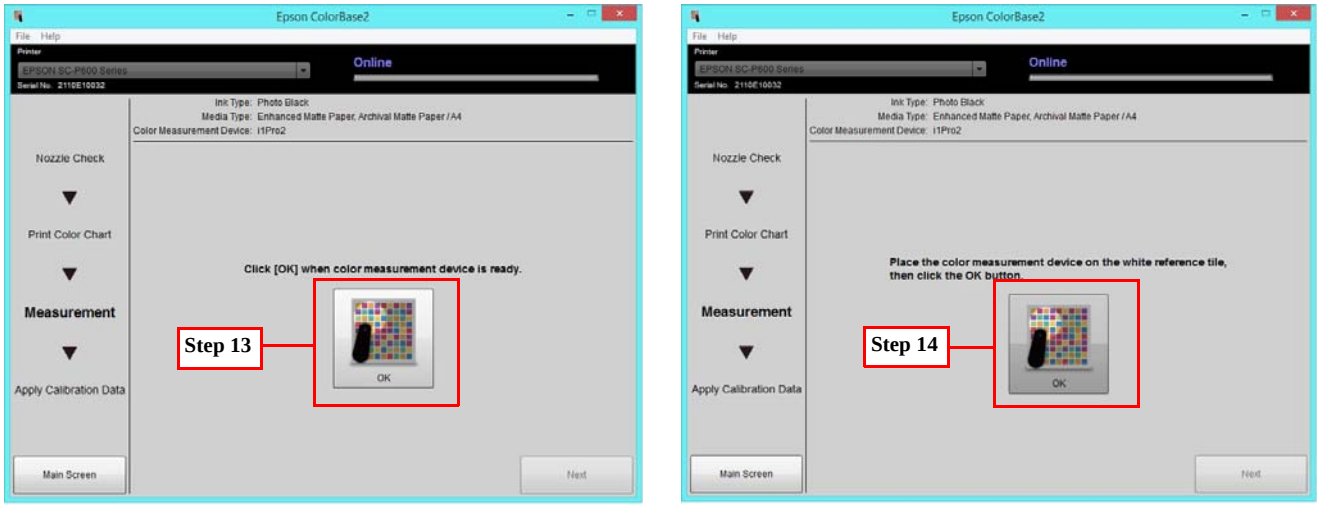


Figure 2-34. Preparing the Calibrator

- **The white reference tile (white plate) on the calibration plate should be clean. Clean off any dirt with alcohol or other organic solvent. Use a soft cloth so as not to damage the white reference tile (white plate).**
- **The white reference tile (white plate) and the calibrator are used as a pair. Do not use any other plate attached with other calibrators.**

15. Place the color chart on the backing board as shown in Figure 2-35 and set the scanning ruler, and then click OK. (Use Premium Glossy Photo Paper instead if no backing board is available.) i1Pro2 is used for explanation in the following figures.

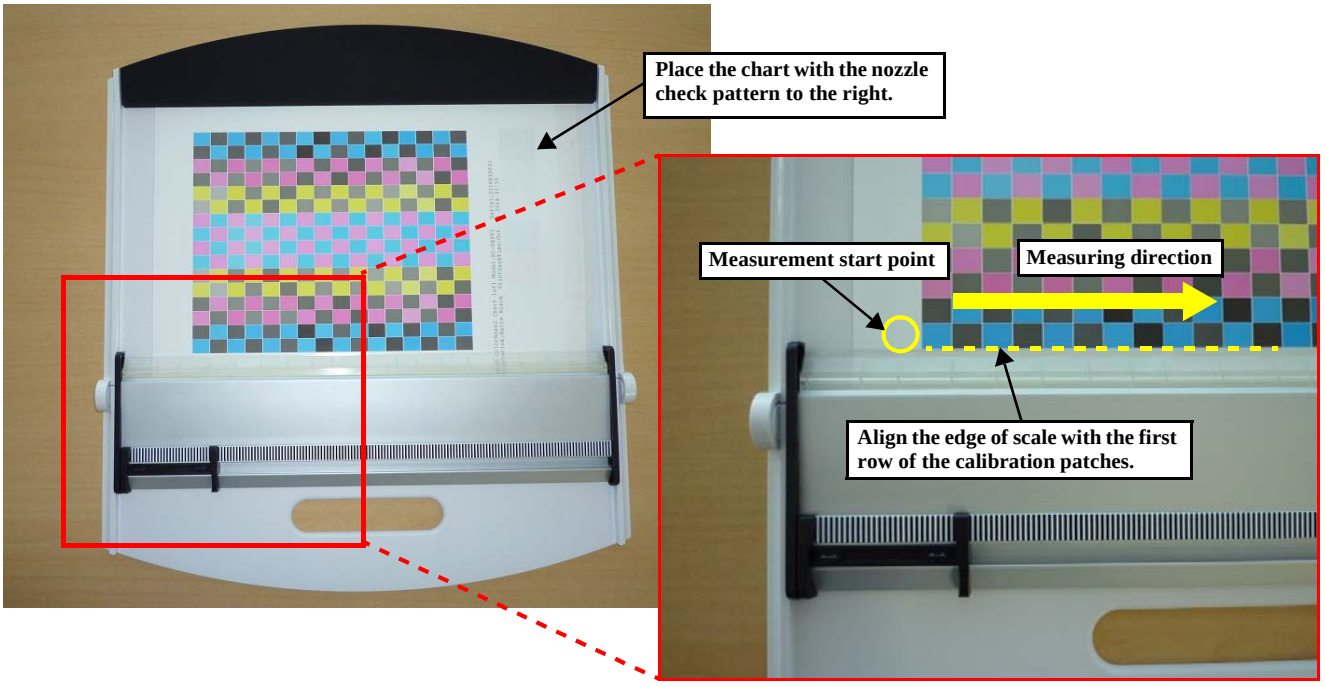


Figure 2-35. Color chart setting

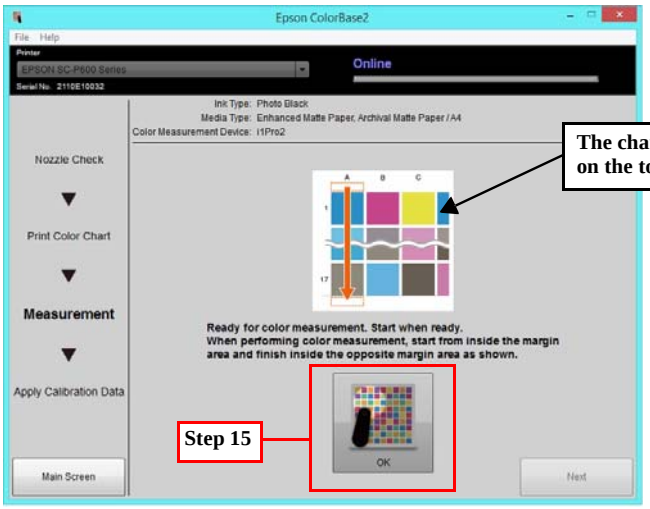


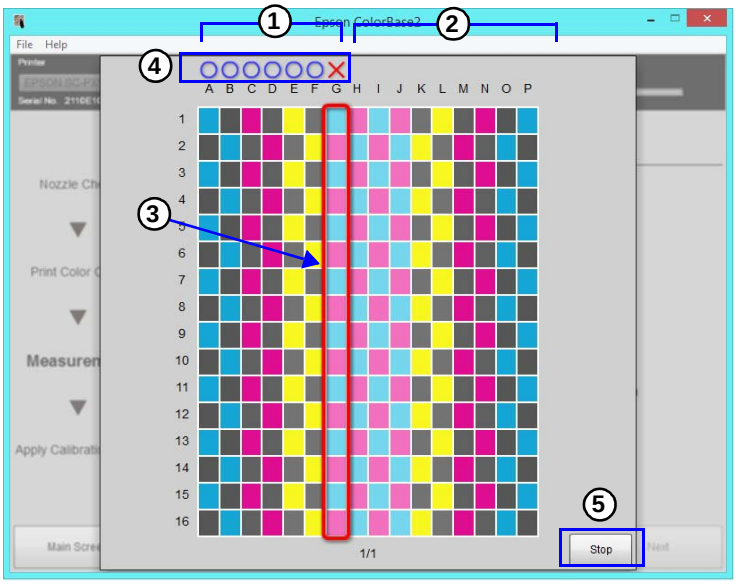
Figure 2-36. Preparation for calibration

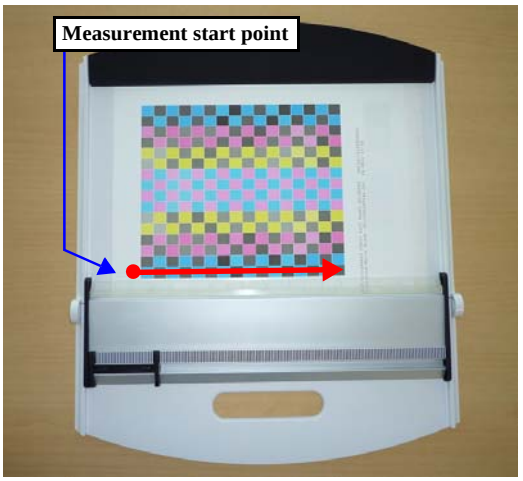
To avoid rubbing the color patches, set the color chart and perform the calibration with the display on the tool window rotated in 90 degrees counterclockwise.

16. Perform color measurement according to the instruction on the window. Press and hold the button on the calibrator and wait for one to two seconds, and then keep holding it and slide the calibrator at a steady speed in the measuring direction from the measurement start point shown in Figure 2-35.

    - i1Pro: Slide the calibrator on the calibration patches from left to right in approximately five seconds.
    - i1Pro2: Slide the calibrator on the calibration patches from left to right in approximately five seconds, and let go of the button once. And then, press and hold the button on the calibrator again, and then keep holding it and slide the calibrator on the calibration patches from right to left in approximately five seconds.

    When the color measurement is successfully complete, "O" appears, and then perform the color measurement on the next row.





Orientation of the chart during measurement

(1)	Color measurement "complete" rows	Measured rows (starting from the left)
(2)	Color measurement "not complete" rows	Rows to be measured (up to the right end)
(3)	Cursor	Automatically moves right when color measurement of a row is complete.
(4)	Measurement result	"O" appears if the color value is within the normal range. Otherwise or the number of patches is not matched, "X" appears.
(5)	Stop button	Discards the current measurement result and go back to the previous window before measurement.

Figure 2-37. Starting the Color Measurement

Table 2-8. Limitations of the calibrator

	i1Pro	i1Pro2
Measurement start point	Upper left on the color chart	Upper left on the color chart
Measuring direction	In the direction of the arrow in Figure 2-35 only. An error occurs if scanned in the reverse direction.	■ Outward (tungsten light): In the direction of the arrow in Figure 2-35 only. ■ Inward (UV light): In the reverse direction from the outward scanning
Times of measurements per row	Once	Two times (one cycle)
When the measurement fails	Perform the measurement of the failed row. Cannot go on to the next row until the measurement is successfully complete.	Perform the measurement of the failed row. Cannot go on to the next row until the measurement is successfully complete.

- **During color measurement, do not allow the calibrator to rub against unmeasured patches on the chart.**
- **Prevent the ruler and calibrator from coming off the chart sheet during color measurement. Doing so will cause incorrect color measurement.**
- **Do not press the calibrator to the chart too strongly, otherwise the patch may be damaged.**
- **If "X" appears repeatedly and the measurement fails continuously, the measured color value may be far out of the standard range. In that case, end the measurement and go to the troubleshooting below.**

Table 2-9. Troubleshooting when the measurement fails

Presumable Cause	Major Troubleshooting
The adjustment of the printer may be insufficient.	After the adjustments that must be done after parts replacement are all complete, perform the measurement again.
■ The media has deteriorated and discolored. ■ The media was stored in bad conditions and damaged.	Use new Ultra Premium Presentation Paper Matte Enhanced Matte Paper or Archival Matte Paper.
The color or contamination of the backing may be interfering.	■ When using the backing board: remove any contamination on the backing board, and then stack two color charts over on each other and perform the measurement. ■ Measurement without a backing board: Stack the color chart over on each other on blank (white) Premium Glossy Photo Paper and perform the measurement.
Wrong row/wrong measuring direction	See Figure 2-35 and Table 2-8 and confirm the current row to be measured and the measuring direction are correct.
Measuring at an angle	Align the scale with the chart correctly again, and then slide the calibrator in parallel to the row to be measured on the patches.

17. When the measurement of all the rows is complete, click the Completed button.

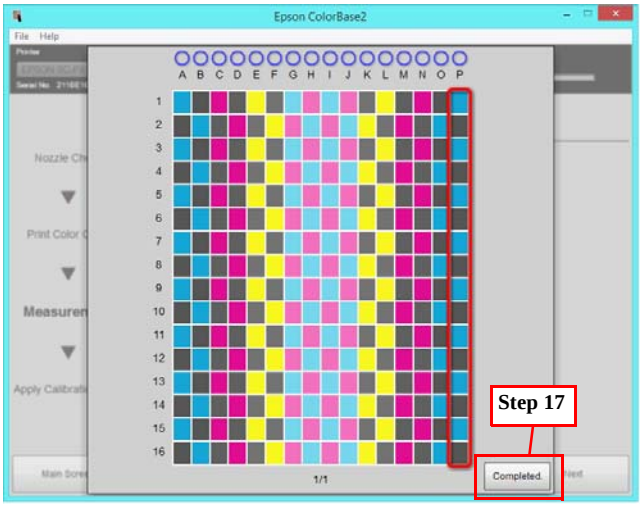


Figure 2-38. Color measurement completed

18. Click the Next button on the color measurement completed window.
19. On the apply calibration data window, click the Active button to write the calibration data to the printer.

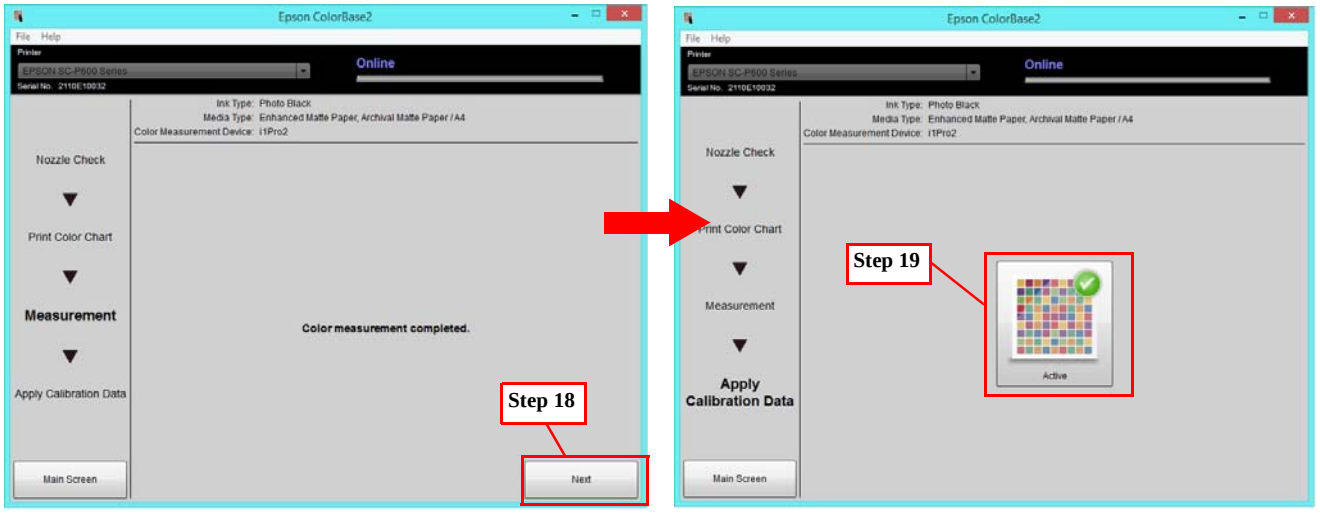


Figure 2-39. Application of correction values

20. End the tool.

2.3.8.3 Maintenance menu

To display the maintenance menu, click the Maintenance button on the main screen.

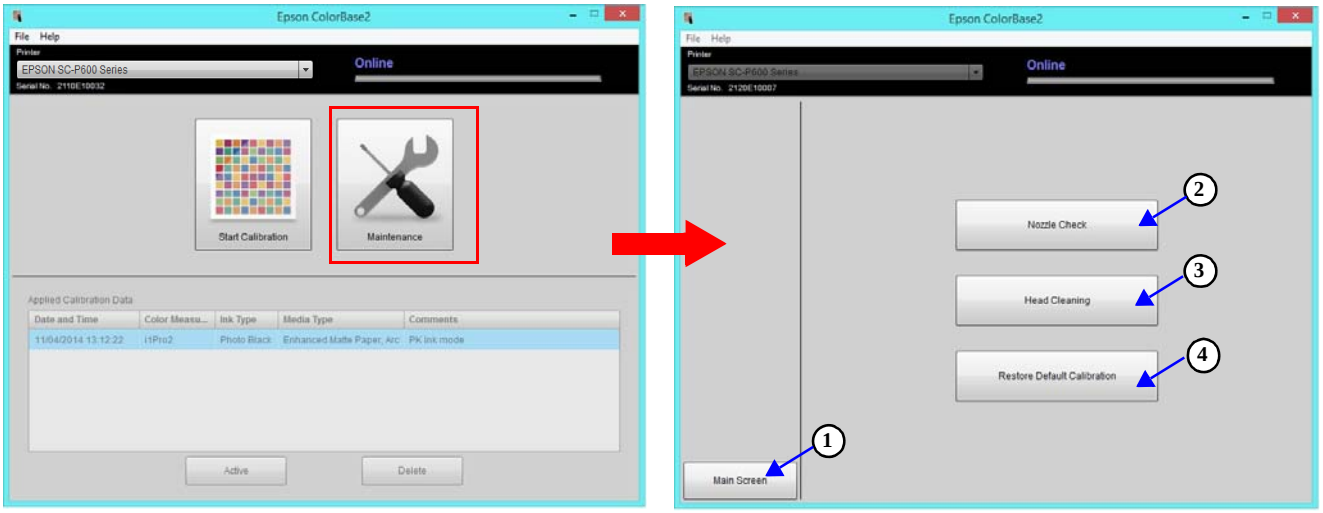


Figure 2-40. Maintenance menu

Table 2-10. Details of the maintenance menu

	Item	Description
(1)	Main screen button	Goes back to the main screen.
(2)	Nozzle check button	Prints a nozzle check pattern.
(3)	Head cleaning button	Select a cleaning level among CL1, CL2, CL3, and CL4 and run it. (Level selection available only in the Service Mode. Basically use CL1, and if not improved much, raise the level and try again.)
(4)	Restore Default Calibration button	Overwrite the data in the User Color ID area back to the saved data in the Production Color ID area.

2.3.9 Ink Selector Check

This section describes Ink Selector Check.

- ☐ Tools
  - ■ Adjustment Program
  - ■ Recommended printing paper: Plan Paper or Presentation Paper Matte
- ☐ Adjustment procedure

1. Start the Adjustment Program.
2. Select the Ink Selector Check, and click [Check] for checking the current color
3. Select other color after confirming the color of Step 2, and click [Print] for printing the check pattern.
4. After printing, select other color with color of Step 3, and click [Print] again.
5. Compare the check patterns, and confirm the operation of the ink selector is correct by third color pattern of the check patterns.

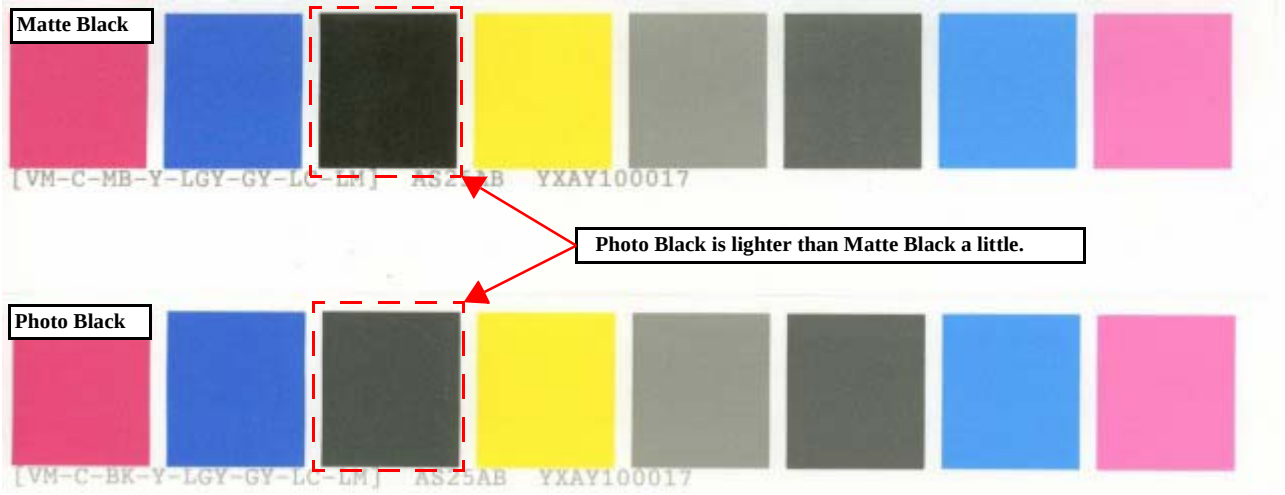


Figure 2-41. Confirming the check patterns

2.3.10 Touch screen adjustment

This section describes calibration of Touch screen.

- ☐ Purpose
  To adjust the positions between LCD screen and detected position.
- ☐ Tools
  Stylus pen
  (You can also use roundish plastic stick. It's difficult to access by hand because the target is too small.)
- ☐ Adjustment procedure

1. Call Inspection mode with pressing [Power] + [Home] + [Back] buttons for over 10 seconds.

Table 2-11. How to run Inspection mode

In inspection mode, Never to access the menu which is Not indicated as follows. (To avoid mechanical troubles because of the incorrect data input.)

2. Select "3.Touch Screen Inspection" from Inspection menu using [Home] button, then Press [Back] button. Moreover, Select "1.Touch Screen Calibration" using [Home] button, then Press [Back] button.
3. Display the adjustment screen by pressing "Push this Area. [OK]."
   (When you need to cancel the adjustment, Press the area where "Push [STOP] button [Cancel]" is displayed.)
4. Press "+" at 4 corners on the screen in order using stylus pen.
5. Press "Push this area. [Save]" using stylus pen.
6. Press red areas using stylus pen in order.
7. When completing the adjustment properly, "Complete" is displayed. Press [Back] button then Press [Power] button to shutdown the printer.
   When not completing the adjustment properly, "Retry Check" is displayed. Press [Back] button then retry adjustment from Step 3.

CHAPTER **3**

MAINTENANCE

3.1 Overview

This section provides information to maintain the printer in its optimum condition.

3.1.1 Cleaning

Except for the printhead, there are no other mechanical parts or units that require periodic cleaning. However, if need arises, clean the component observing the following instructions.

☐ Instructions for cleaning

- Exterior parts such as housing
  Wipe dirt off with a soft clean cloth moistened with water. For glossy or transparent parts, use of unwoven cloth is recommended to avoid scratching those parts.
- Inside of the printer
  Remove paper dust with a vacuum cleaner.
- Rubber or plastic rollers such as an LD roller used to feed paper
  If paper dust adhered to the rollers decreases the frictional force of the rollers and the rollers cannot properly feed paper, wipe off the paper dust with a soft cloth moistened with diluted alcohol.

☐ Instructions for cleaning ink stains

Wipe the stains off with a cloth wrung out of diluted alcohol.

- **Do not use alcohol for cleaning the transparent parts. Doing so may cause them to get cloudy.**
- **When wiping paper dust off the LD roller, be careful not to rub against the surface asperity.**
- **To minimize the effect on the parts, use diluted alcohol such as 70% diluted ether.**
- **After using alcohol for cleaning, make sure to wipe the part off with a soft dry dust-free cloth to remove alcohol traces fully.**

3.1.2 Lubrication

The type and amount of the grease used to lubricate the printer parts are determined based on the results of the internal evaluations. Therefore, refer to " 3.2 Lubrication Points and Instructions (p73)" for the repairing procedures below, and apply the specified type and amount of the grease to the specified part of the printer mechanism.

☐ Grease

Type	Name	EPSON Part Code	Supplier
Grease	G-26	1080614	EPSON
Grease	G-45	1033657	EPSON
Grease	G-71	1480655	EPSON
Grease	G-74	1409257	EPSON

☐ Shipping Liquid

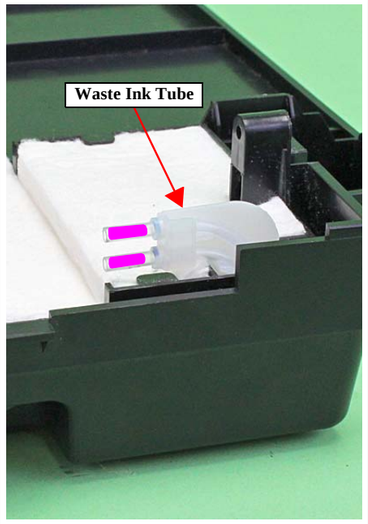
Type	Name	EPSON Part Code	Supplier
Shipping Liquid	CR06	6104713 (1 kg) 6104714 (18 kg)	EPSON

☐ Tools

Name	Availability	EPSON Part Code
Injector	O *	---
Brush	O *	---
Flux dispenser	O *	1049533

Note *: Use tools whose specifications are specified in " 3.2 Lubrication Points and Instructions (p73)".

3.2 Lubrication Points and Instructions



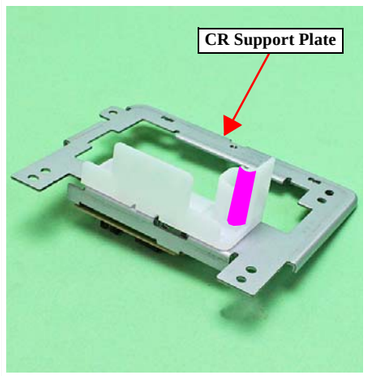
<Lubrication Point>
Waste Ink Tube (x2)

<Type>
CR06

<Application Amount>
Adequate amount

<Remarks>
Apply with Flux Dispenser.

Figure 3-1. Waste Ink Tube



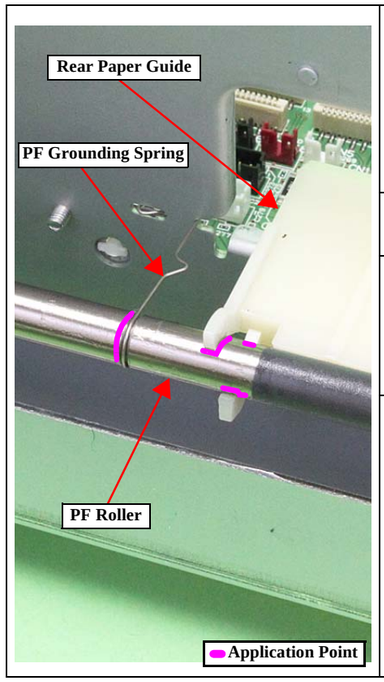
<Lubrication Point>
Contact point of the Ink Tube

<Type>
G-74

<Application Amount>
Adequate amount

<Remarks>
Apply with Flux Dispenser.

Figure 3-2. CR Support Plate



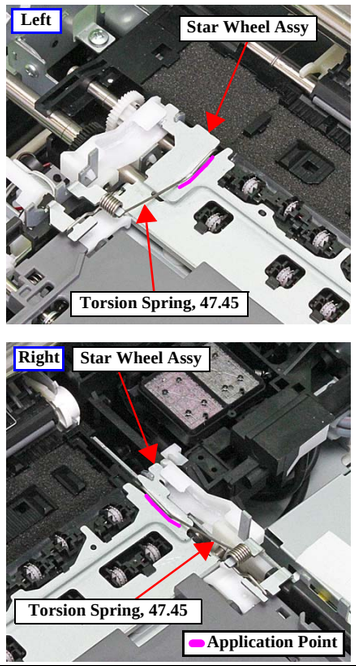
<Lubrication Point>
1. Rear Paper Guide (Contact points of the PF Roller)
2. PF Grounding Spring (Contact points of the PF Roller)

<Type>
G-45

<Application Amount>
1. ϕ 1 mm x adequate amount
2. ϕ 1 mm x half of the circumference

<Remarks>
Apply with injector.

Figure 3-3. Rear Paper Guide / PF Grounding Spring



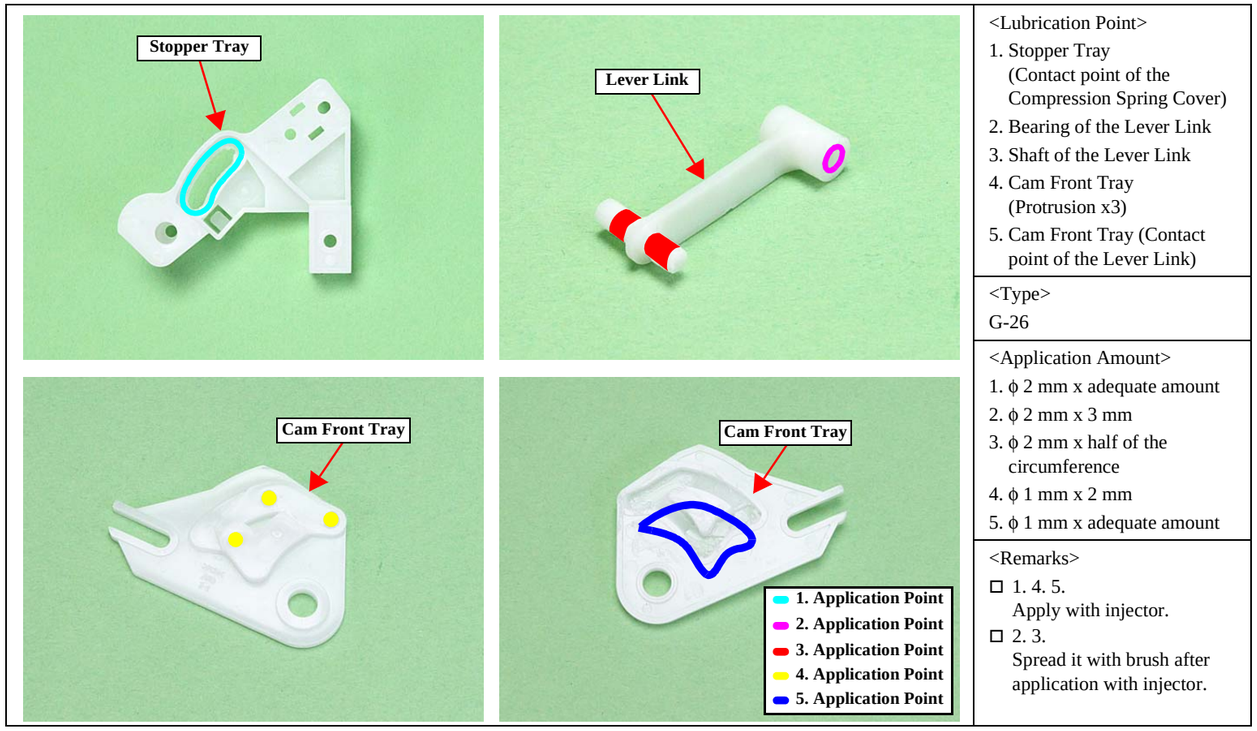
<Lubrication Point>
Contact points of the Torsion Spring, 47.45 (x2)

<Type>
G-26

<Application Amount>
ϕ 2 mm x 3 mm

<Remarks>
☐ Spread it with brush after application with injector.

Figure 3-4. Star Wheel Assy



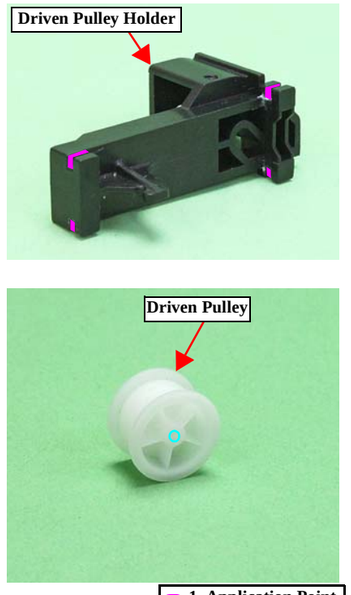
<Lubrication Point>
1. Stopper Tray (Contact point of the Compression Spring Cover)
2. Bearing of the Lever Link
3. Shaft of the Lever Link
4. Cam Front Tray (Protrusion x3)
5. Cam Front Tray (Contact point of the Lever Link)

<Type>
G-26

<Application Amount>
1. ϕ 2 mm x adequate amount
2. ϕ 2 mm x 3 mm
3. ϕ 2 mm x half of the circumference
4. ϕ 1 mm x 2 mm
5. ϕ 1 mm x adequate amount

<Remarks>
☐ 1. 4. 5. Apply with injector.
☐ 2. 3. Spread it with brush after application with injector.

Figure 3-5. Stopper Tray Unit



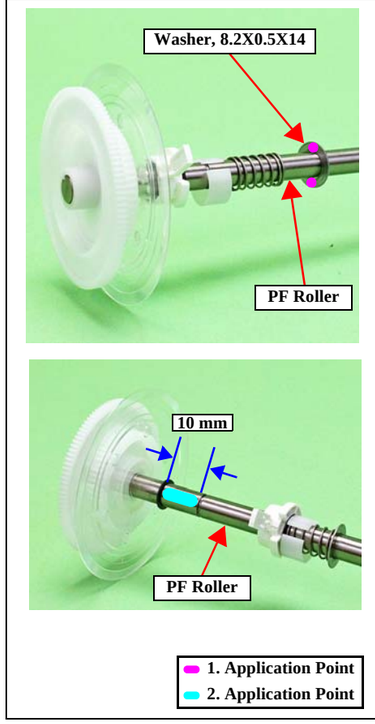
<Lubrication Point>
1. Contact points (x4) between the Driven Pulley Holder and the Frame
2. Shaft hole of the Driven Pulley (x1 each)

<Type>
G-26

<Application Amount>
1. ϕ 1 mm x 2 mm
2. ϕ 1 mm x 1 mm (5 mg)

<Remarks>
Apply with injector.

Figure 3-6. Driven Pulley



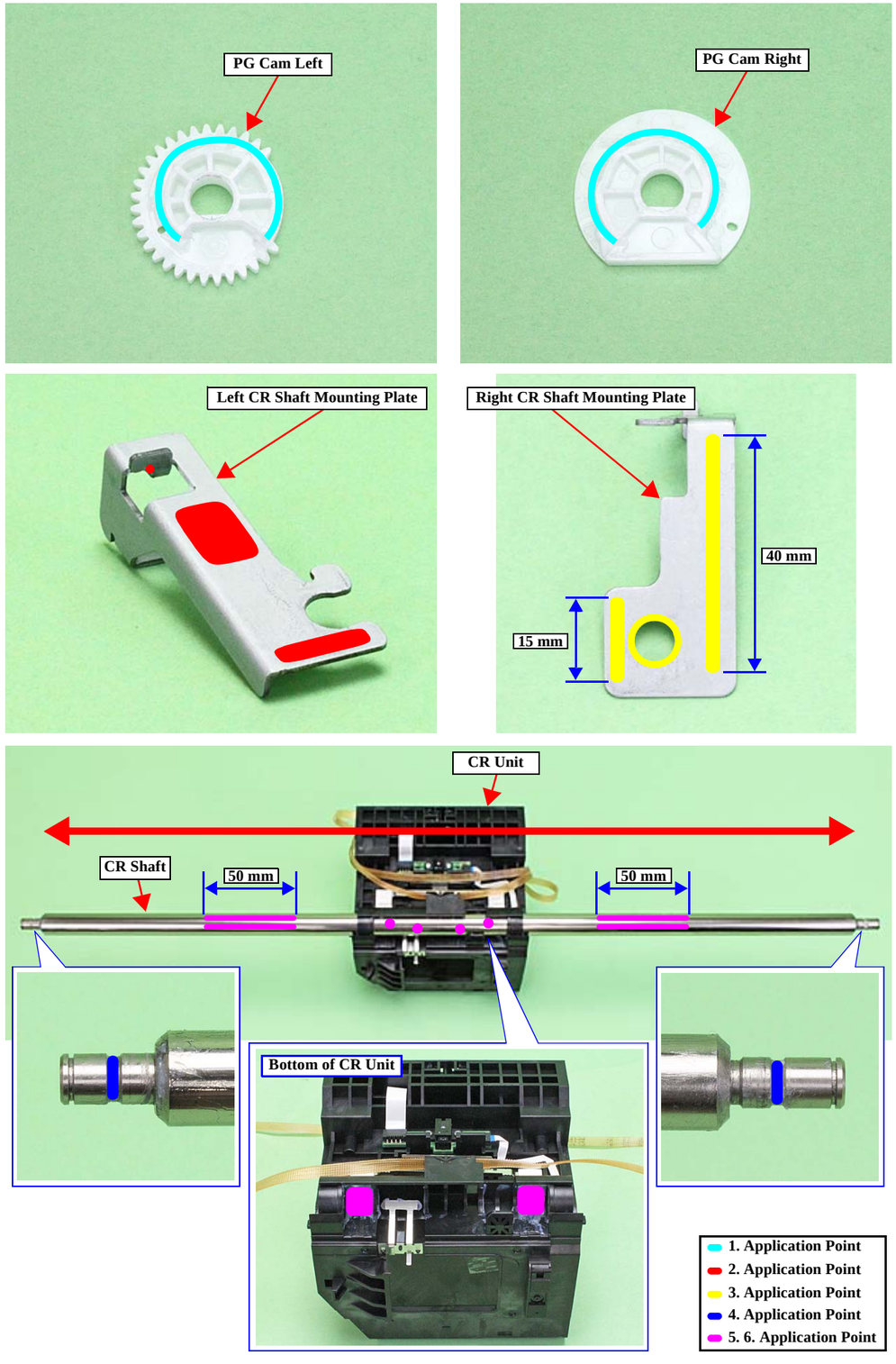
<Lubrication Point>
1. Washer, 8.2X0.5X14 (x2)
2. Shaft of the PF Roller

<Type>
G-45

<Application Amount>
1. ϕ 2 mm x 1 mm
2. ϕ 1 mm x 10 mm

<Remarks>
☐ 1. Apply with injector.
☐ 2. Spread it with brush while rotating the PF Roller after application with injector.

Figure 3-7. PF Roller



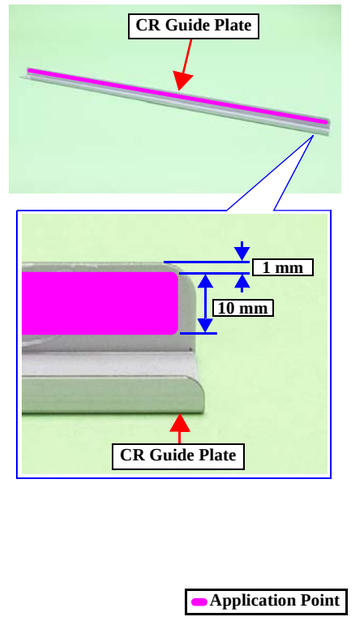
<Lubrication Point>
1. PG Cam Left / Right
2. Left CR Shaft Mounting Plate (x3)
3. Right CR Shaft Mounting Plate (x3)
4. CR Shaft
(Contact points between the Torsion Spring, 13.14 and the PG Torsion spring Left)
5. CR Unit
(Contact points of the CR Shaft)
6. CR Shaft

<Type>
1. 2. 3. 4. G-26
5. 6. G-71

<Application Amount>
1. ϕ 1 mm
2. 13 mg (total amount)
3. ϕ 2 mm x 40 mm
ϕ 2 mm x 15 mm
ϕ 1 mm x whole circumference
4. ϕ 1 mm x 2 mm
5. 6. 140 ± 10 mg (total amount)

<Remarks>
☐ 1. Apply on the cam of the PG Cam Left/Right with injector.
☐ 2. 3. Apply with brush.
☐ 4. 5. Apply with injector.
☐ 6. Apply with the following.
1. Apply the center of the CR Shaft (x4) with brush.
2. Apply twice (50 mm each) on the left side of the CR Shaft and spread it with brush.
3. Move the CR Unit back and forth seven times slowly to spread the grease.
4. Apply twice (50 mm each) on the right side of the CR Shaft and spread it with brush.
5. Move the CR Unit back and forth seven times slowly to spread the grease.

Figure 3-8. CR Unit



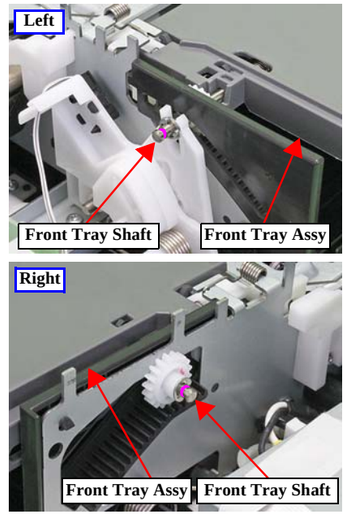
<Lubrication Point>
Contact point of the CR Unit

<Type>
G-71

<Application Amount>
ϕ 2 mm x 70 mm

<Remarks>
On 1 mm from the end of the frame, apply with injector and spread it to 10 mm width with brush.

Figure 3-9. CR Guide Plate



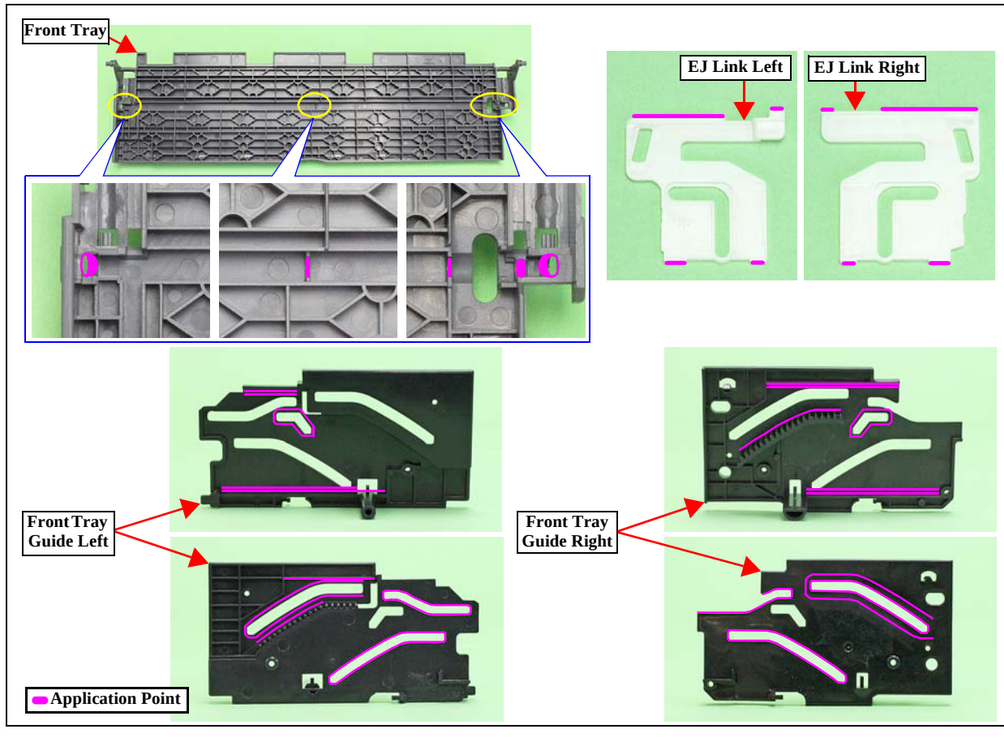
<Lubrication Point>
Contact points (x2) between the Front Tray Shaft and the Torsion Spring, 187.9

<Type>
G-26

<Application Amount>
ϕ 2 mm x 1 mm

<Remarks>
Apply with injector.

Figure 3-10. Front Tray Assy



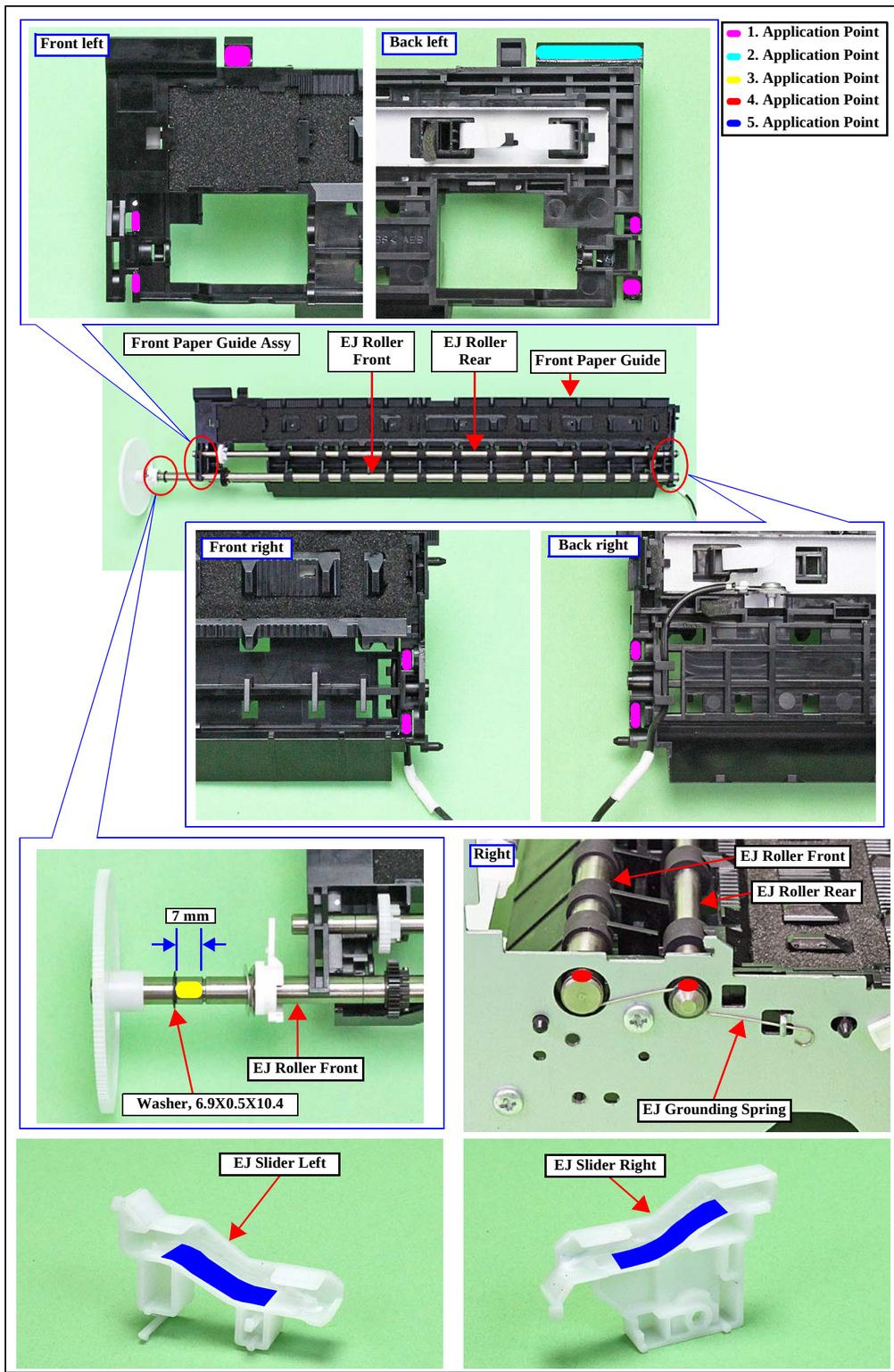
<Lubrication Point>
1. Front Tray
(Contact points (x5) of the Front Tray Shaft)
2. EJ Link Left / Right (x4 each)
3. Front Tray Guide Left / Right (x10 each)

<Type>
G-74

<Application Amount>
Adequate amount

<Remarks>

Figure 3-11. Front Tray



<Lubrication Point>
1. Front Paper Guide (x9)
2. Contact point between the Front Paper Guide and the PF Roller
3. EJ Roller Front Shaft
4. Contact points (x2) between the EJ Roller Front / Rear and the EJ Grounding Spring
5. EJ Slider Left / Right

<Type>
1. 2. 3. 4. G-45
5. G-26

<Application Amount>
1. 3. Adequate amount
2. ϕ 2 mm x 15 mm
4. ϕ 1 mm x 3 mm
5. ϕ 2 mm x 1 mm

<Remarks>
- ☐ 1. 5. Apply with injector.
- ☐ 3. Apply to 7 mm from the Washer, 6.9X0.5X10.4, and spread it with brush while rotating the EJ Roller Front.
- ☐ 4. Apply after installing the EJ Grounding Spring with brush, and spread it while rotating the EJ Roller Front/EJ Roller Rear.

Figure 3-12. Front Paper Guide Assy

CHAPTER **4**

APPENDIX

4.1 Power-On Sequence

This section describes the power-on sequences for this product. The conditions are as follows.

☐ Conditions

- Initial ink charge has finished.
- The Front Tray Assy is set at the standard paper printing position without roll paper loaded.
- No paper on the paper path.
- Turned off normally without any error.
- The Printhead is capped with the Cap of the Ink System Assy.
- The PG position is PG 2.
- The Carriage is normally fixed by the CR Lock.
- The ink cartridges with sufficient ink are installed, and no ink low or ink end error is occurring.

The following explains how to use the simplified diagrams in Table 4-1. The diagrams show the movement of each component as seen from the front of the printer.

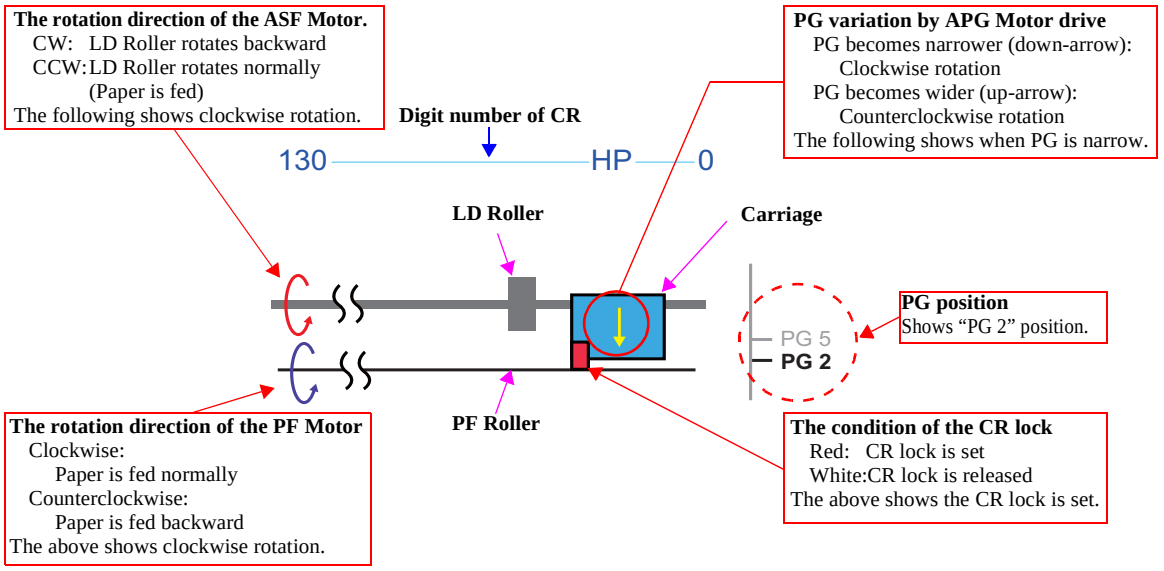
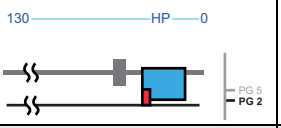
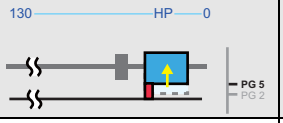
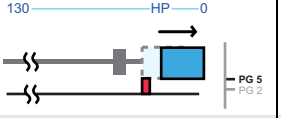
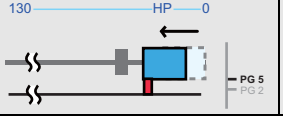


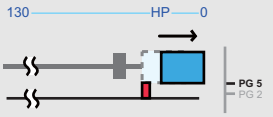
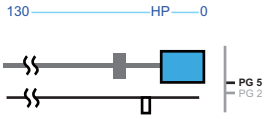
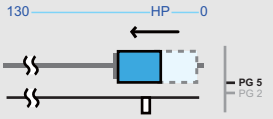
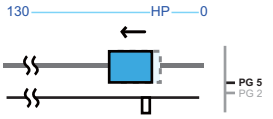
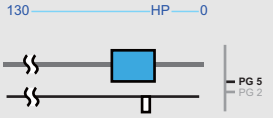
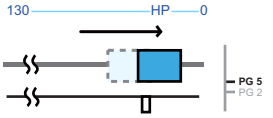
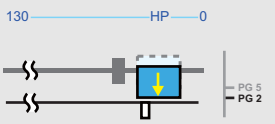
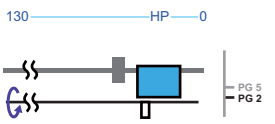
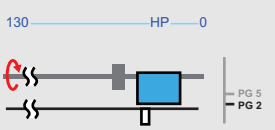
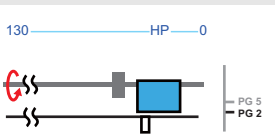
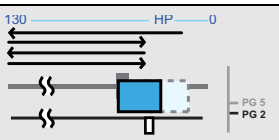
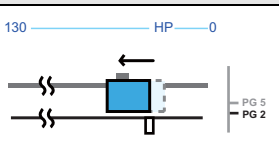
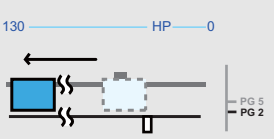
Figure 4-1. How to use the simplified diagrams

Table 4-1. Operation of the power-on sequence

Operation	Movement of each component	Pump Motor*1	Decomp Motor*2
1. Checking waste ink overflow 1-1.Reads out the protection counter value to check waste ink overflow.		---	---
2. APG initialization 2-1.The APG Motor rotates counterclockwise until the PG position is set to PG:5 to initialize the APG mechanism.		---	---
3. Seeking the home position 3-1.The carriage moves to the 0-digit side slowly and confirms it touches the Right Frame.		---	---
3-2.The carriage moves to the 130-digit side slowly and confirms it touches the CR lock.		---	---

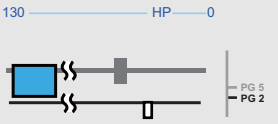
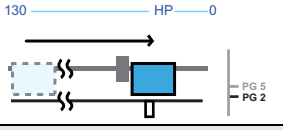
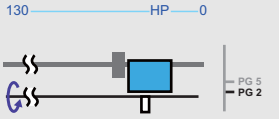
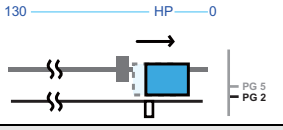
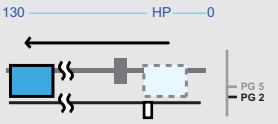
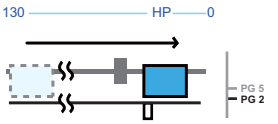
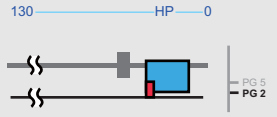
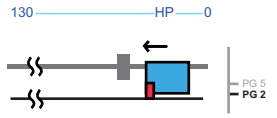
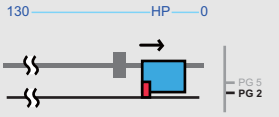
(Continue to the next page)

Table 4-1. Operation of the power-on sequence

Operation	Movement of each component	Pump Motor*1	Decomp Motor*2
3-3.The carriage moves to the 0-digit side slowly and confirms it touches the Right Frame, and the home position is fixed. Afterward, the carriage position is monitored according to the signals from the CR Encoder.		---	---
4. Releasing the CR lock 4-1.The Pump Motor rotates counterclockwise and releases the CR lock.		CCW	---
4-2.The carriage slowly moves to the 130-digit side to the CR lock check position.		---	---
4-3.The carriage slightly moves to the 130-digit side.		---	---
4-4.The Pump Motor rotates counterclockwise to set the Wiper of the Ink System, and then the Pump Motor rotates clockwise to retract the Wiper.		CCW to CW	---
4-5.The carriage slowly returns to its home position.		---	---
5. Setting the APG to PG:2 5-1.The APG Motor rotates clockwise and sets the carriage position to PG:2.		---	---
6. PF-ASF initialization 6-1.The PE Sensor detects no paper and the ASF Sensor detects that the ASF is on its home position, and then the PF Motor rotates clockwise for approx. one second.		---	---
6-2.The ASF Motor rotates counterclockwise until the ASF Sensor detects that it gets out of its home position.		---	---
6-3.The ASF Motor rotates clockwise until the ASF Sensor detects it is on its on home position, and initializes the ASF mechanism.		---	---
7. Low temperature operation sequence*3 7-1.The carriage moves back and forth between 0-digit side and the 130-digit side for two times.		---	---
8. CR Motor measurement and PW Sensor initialization 8-1.The carriage slowly moves to the 130-digit side.		---	---
8-2.The carriage performs a load measurement while moving to the VH Check position, and records the detected voltage of the PW Sensor at the specified three positions, then stops.		---	---

(Continue to the next page)

Table 4-1. Operation of the power-on sequence

Operation	Movement of each component	Pump Motor*1	Decomp Motor*2
8-3.The carriage detects the voltage of the PW Sensor at the carriage stop position (the black area at the Paper Guide Front).		---	---
8-4.The carriage performs a load measurement while moving to the 0-digit side, and stops.		---	---
9. PF Motor measurement 9-1.The PF Motor rotates clockwise for approx. one seconds, and performs a load measurement.		---	---
9-2.The carriage returns to its home position.		---	---
10.Detecting ink cartridge and initializing ink system*4 10-1.The carriage moves to the 130-digit side to check the ink end sensor. The ink remaining is detected after completing the check.		---	---
10-2.The carriage slowly returns to its home position.		---	---
11.CR lock setting 11-1.The Pump Motor rotates clockwise, and sets the CR lock.		CW	---
11-2.The carriage moves to the 130-digit side slowly and confirms it touches the CR lock.		---	---
11-3.The carriage returns to its home position.		---	---

Note *1: The rotation directions of the Pump Motor and their corresponding functions are as follows.
Clockwise: Cap closing/Pump suction/Wiper retracting/CR locking
Counterclockwise: Cap opening/Pump release/Wiper setting/CR unlocking

*2: The rotation directions of the Decomp Motor and their corresponding functions are as follows.
Clockwise: Vented to atmosphere
Counterclockwise: Decompression
However, the Decomp Pump will not operate under the preconditions given in this section.

*3: Executes when the detected temperature is under 5°C (41°F) by the thermistor on the Printhead.

*4: The empty suction operation may occur depending on the situation.

4.2 Connector Diagram

Cable connections of this printer are shown below.

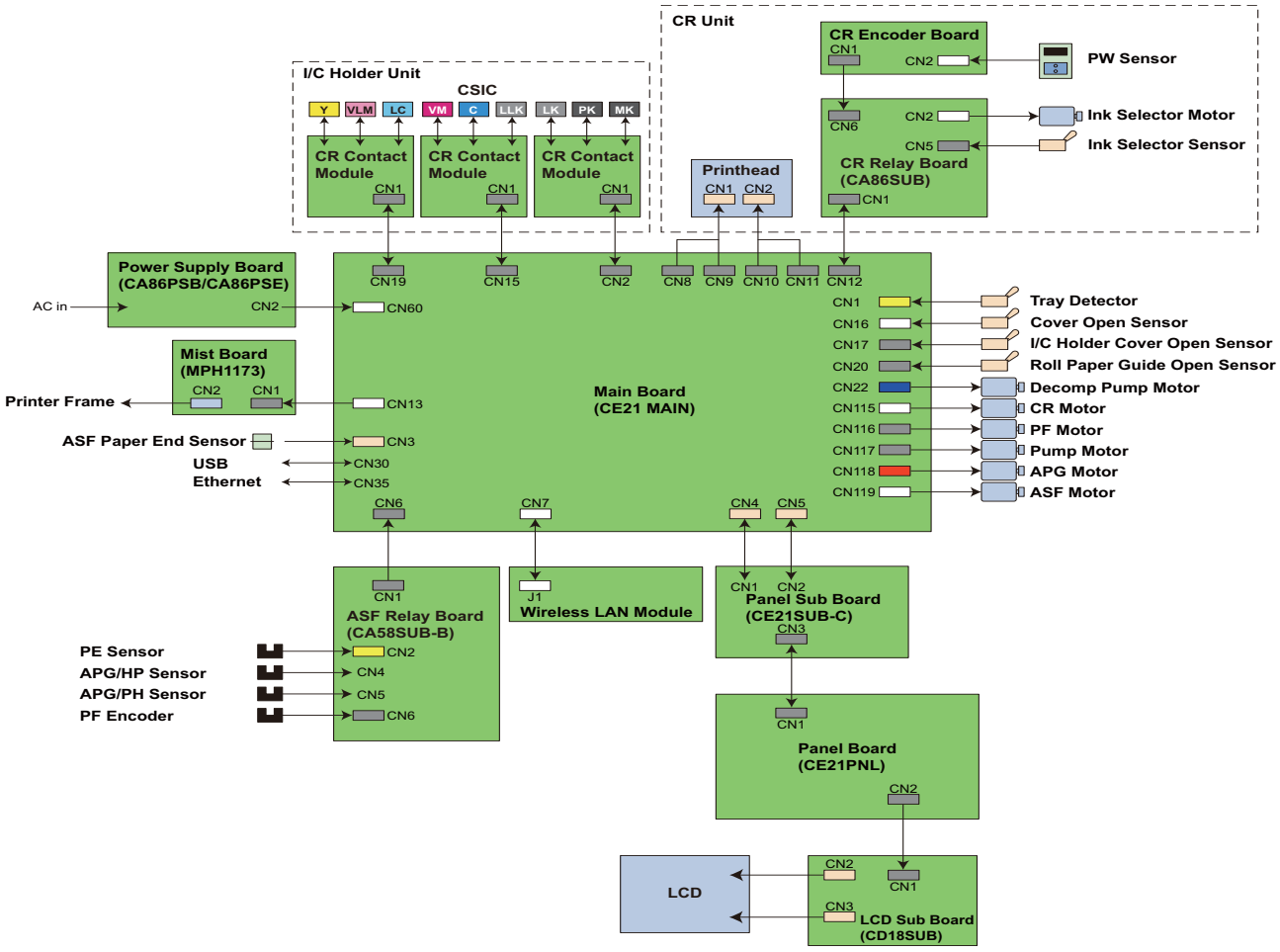


Figure 4-2. Connector Diagram

4.3 Fatal Error Code

This section describes the fatal error code and the possible cause for this product.

Table 4-2. Fatal Error List

Error type	Error code	Error name	Possible cause	Suspect Parts
DC motor error (CR)	01H	PID excess load error	• CR Encoder failure • Motor driver failure • Increase of CR load when printer is printing (CR shaft is damaged, CR shaft receiver is damaged, Grease is consumed, DR layshaft is deformed) • Paper jam • CR is collided to Front Tray Assy • CR is collided to Upper Paper Guide Assy • CR Motor failure	• CR Encoder • CR FFC • Main Board • CR Shaft, CR Unit, Guide CR • CR grease • Remove Paper Jam • Front Tray Assy • Front Tray Sensor • APG Assy • Upper Paper Guide Assy • CR Motor
	03H	PID reverse error	• CR Scale stain • CR Encoder failure • Motor driver failure • CR Belt failure • CR Pully failure	• CR Scale • CR Encoder Assy • CR FFC • Main Board • CR Belt • CR Pully
	05H	PID speed degradation error	• CR Encoder failure • Motor driver	• CR Encoder • CR FFC • Main Board • CR Motor • Paper Jam
DC motor error (PF)	F1H	PID excess load error	• PF Encoder failure • Motor driver failure • Increase of PF load (CR Bush is weared, CR grease is consumed, PF Roller Center Support is deformed, CR is collided to Front Tray Assy) • Paper jam • PF Motor failure	• PF Encoder • Main Board • Check PF Belt tension • CR Shaft grease • Check PF Roller Shaft Center Support Position Adjustment • PF Roller • PF Encoder • Paper Jam • PF Motor • Front Tray Assy • Rear Guide Assy
	F3H	PID reverse error	• PF Scale stain • PF Encoder failure • Motor driver failure • PF Belt failure	• PF Scale • PF Encoder • PF Encoder FFC • Main Board • PF Belt
	F6H	Over current error	• Connection failure of the PF Motor or the PF Encoder. • PF irregular load • PF Motor or PF Encoder failure.	• PF Encoder • PF Motor

Table 4-2. Fatal Error List

Error type	Error code	Error name	Possible cause	Suspect Parts
Motor drive time error Motor drive time error	D1H	CR (PID) driving time error	• Firmware abnormal (sequence failure, bug)	• Firmware Update
	D3H	PF (PID) driving time error	• Firmware abnormal (sequencefailure, bug)	• Firmware Update
	D5H	ASF driving time error		
	D6H	PUMP driving time error	• Increase of rotation load of Pump unit (deformation of gear, misarrangement of phase)	• Ink System
	D7H	APG driving time error	• Firmware abnormal (sequence failure, bug)	• Firmware Update
	D9H	Ink selector driving time error	• Increase of changing load of ink selector (deformation of gear)	• Ink Supply Unit
Command error	30H	EEPROM verify error (by command)	---*	---*
Printhead system error	40H	Transistor temperature error	• Main Board failure	• Main board
	41H	X-Hot detect error (pre printing)	• Printhead failure • Main Board failure	• Print Head • Print Head FFC • Main Board
	42H	X-Hot detect error (after flushing)		
	43H	Head temperature error		
Sequence error	50H	CR Home position error	• Paper jam • Foreign object • Deformation of the Main Frame • CR lock operation failure	• Ink System • Waste Ink Tube
	51H	Deadlock avoidance error		
	52H	Impossible contact detection error		
	53H	PF / ASF reset error	• detection operation of ASF phase failure	• ASF Assy • ASF Motor
	54H	LD Roller reset error		
	55H	Roll paper jam error	• Roll paper jam • Use non-supported media (PW detector cannot detect it) • Mistake of the paper feed method. • PW detector failure	• PW detector
Sensor error	60H	PW detector error	• PW detector failure	• PW detector
	61H	PW detector confusion error	• Detection operation of PW failure (detection reflection rate) (Printing to platen, ink mist attach to Front Paper Guide) • Paper jam	• Front Paper Guide Assy • PW detector • Remove Paper jam
	62H	CD tray detection error	• CD tray setting failure • CD tray failure • CD is not put on the tray • PW detector failure	• CD tray • PW detector
APG error	70H	APG assignment position driving error	• Detection operation of ASF phase failure • Deterioration of PF durability • PG Adjustment of right and left failure	• APG Assy • Bushing Cam PG • Bushing balancing adjustment part
	71H	APG reset error		
Ink device error	B0H - CFH	Ink device error	• Ink Cartridge failure • CSIC Terminal failure • CR Contact Module failure • Main Board failure	• Ink Cartridge • CSIC • CRCM • Main Board
Circuit error	80H	Circuit error (include FFC disconnection and fuse blowout)	• Main Board failure • FFC disconnection	• Main Board • FFC

Note "*": Not occurs except in manufacturing process.